Volume XVII, Number 2 $1.50 a Copy, $5.00 a Year

The Journal of Abnormal Psychology and Social Psychology

EDITED BY
MORTON PRINCE, M. D., LL. D.
IN CO-OPERATION WITH
FLOYD H. ALLPORT, Ph. D.
University of North Carolina
ASSOCIATE EDITORS
ADOLF MEYER, M. D.
Johns Hopkins University
BORIS SIDIS, M. A., Ph. D., M. D.
Portsmouth, N. H.
WILLIAM McDOUGALL, M. B., F. R. S.
Harvard University
CHARLES L. DANA, M. D.
Cornell University Medical School
J. RAMSAY HUNT, M. D.
Neurological Institute, New York

OFFICIAL ORGAN OF THE AMERICAN PSYCHOPATHOLOGICAL ASSOCIATION

JULY–SEPTEMBER, 1922

ORIGINAL ARTICLES

The Conditioned Reflex and the Elementary Social Reaction — George Humphrey — 113
A Study of the Industrial Record of Children Assigned to Public School Classes for Mental Defectives and Legislation in the Interest of Defectives — J. E. Wallace Wallin — 120
Supplemental Notes on the Stammering Problem — Ernest Tompkins — 132
Can Instincts Be Given up in Psychology? — Edward Chace Tolman — 139
The Meaning of "Inherited" and "Acquired" in Reference to Instinct — Wesley Raymond Wells — 148
Automatic Writing as an Indicator of the Fundamental Factors Underlying the Personality — Anita M. Mühl — 162
Psychopathic Personality: Report of a Case — Martin W. Peck — 181
Analyzing a Freudian Analysis — S. A. Tannenbaum — 194
Exhibitionism — Stevenson Smith and Edwin Guthrie — 206
Further Data Concerning Sex Differences — Henry T. Moore — 210
The Problem of Racial Psychology — Thomas R. Garth — 215

REVIEWS

A Young Girl's Diary (Freud) — 220
The Glands Regulating Personality (Berman) — 220
Human Nature and Conduct (Dewey) — 220
Juvenile Delinquency (Goddard) — 222
A General Introduction to Psychoanalysis (Freud) — 224
The New Psychology and Its Relation to Life (Tansley) — 226
Elements of Folk Psychology (Wundt) — 228
The Interference of Will Impulses (Roback) — 232
The Defective, Delinquent and Insane (Cotton) — 236

Entered as second-class mail matter at the post office at Boston, October 3, 1906

(Copyright, 1922, by Morton Prince. All rights reserved)

THE JOURNAL OF ABNORMAL PSYCHOLOGY AND SOCIAL PSYCHOLOGY

EDITORIAL DEPARTMENT — Continued

COLLABORATORS:

EDWARD W. TAYLOR, M. D.
Harvard Medical School

GEORGE A. WATERMAN, M. D.
Boston

E. B. HOLT, PH. D.
Brunswick (Maine)

ROBERT M. YERKES, PH. D.
Washington

HERBERT S. LANGFELD, PH. D.
Harvard University

ISADOR H. CORIAT, M. D.
Boston

GEO. V. N. DEARBORN, PH. D., M. D.
U. S. Public Health Service

TOM A. WILLIAMS, M. D.
Washington

MEYER SOLOMON, M. D.
Chicago

LYDIARD H. HORTON
Boston

C. MACFIE CAMPBELL, M. D.
Harvard Medical School

All editorial communications and books for review should be sent to F. H. Allport, Chapel Hill, North Carolina. All subscriptions and business communications should be sent (until further notice) to Morton Prince, 54 Devonshire Street, Boston.

NOTICE TO SUBSCRIBERS AND ADVERTISERS

All connection of the *Journal* with the former publisher, Richard G. Badger, having been amicably terminated by mutual agreement, subscribers and advertisers are hereby notified to send, pending final arrangements for the future publication of the *Journal*, and until further notice, all subscriptions, orders, payments and business communications to Dr. Morton Prince, 54 Devonshire Street, Boston, Mass.

Articles for publication, books for review, and editorial communications should be sent to Dr. Floyd H. Allport, University of North Carolina, Chapel Hill, N. C.

In order to facilitate the new arrangements now in progress for publication of the *Journal*, subscribers whose subscriptions are overdue are earnestly requested to co-operate by sending them at once to the *Journal*, and thus aid in transferring it to the new publishers.

MORTON PRINCE,
RICHARD G. BADGER.

THE JOURNAL OF
ABNORMAL PSYCHOLOGY
AND
SOCIAL PSYCHOLOGY

VOL. XVII JULY-SEPTEMBER, 1922 NUMBER 2

ORIGINAL ARTICLES

THE CONDITIONED REFLEX AND THE ELEMENTARY SOCIAL REACTION

BY GEORGE HUMPHREY

WESLEYAN UNIVERSITY

MANY explanations have been given of organic or unreflective sympathy, that fellow feeling which we experience when another member of our own species is in physical trouble or pain or some other such elementary situation. Typical accounts are those of Adam Smith and Professor McDougall. Adam Smith, that invaluable point of departure for the social sciences, gives a good example of the facts. "When we see a stroke aimed and just ready to fall upon the leg or arm of another person, we naturally shrink and draw back our own leg or our own arm." The explanation that he gives is that we "conceive what we ourselves should feel like in the same situation."[1] However, to a modern psychologist, this seems like an over intellectualization of the process. Whatever we do, we apparently do not thus think out the matter. The whole thing is much more automatic than this would imply. Accordingly, there has developed the type of theory which makes the process depend on some kind of instinct or special mechanism. Thus McDougall writes "We must not say, as many authors have done, that sympathy is due to an instinct, but rather that sympathy is founded on a special adaptation . . . that renders each instinct capable of being excited on the perception of the bodily expression of the same instinct in other persons."[2]

[1] See his "Theory of Moral Sentiments," part 1, chapter 1. This is the theory of "Sich-Hineinversetzens." See B. Groethuysen, Das Mitgefühl, Zeitschr. für Psychol. 34, s161, 1904.

[2] Social Psychology, p. 93.

But in spite of the disclaimer, this seems nearly as difficult as the older instinct theory, for no explanation is given of the nature of the special mechanism. It seems as mysterious and of as definitely a deus-ex-machina character as was ever the instinct of sympathy. Without accepting McDougall's conception of instinct, to which, indeed, the writer finds himself fundamentally opposed, an attempt will here be made to explain the nature of the adaptation of which he speaks, on the assumption that no special mechanism is involved. It will be maintained that the simpler types of sympathy, which are known by some as "organic" sympathy, are produced in accordance with the mechanism of the conditioned reflex, and an attempt will be made to trace out the consequences of this theory in certain further developments.

Axiomatic for the view here presented is the proposition that another human being is originally like any other stimulus to the infant, presenting no peculiar features and no intrinsic differences from any other combination of stimuli. The process of the gradual development of the environment, or stimulus concept, as opposed to the sensation, is a commonplace.[3] After the marking off of the environment, now arises the distinction within the environment between things and persons. This has its origin in the physical similarity of one organism to another, and in the congruity of response in the two cases. The first factor has been clearly brought out in the literature, but the second will perhaps repay a brief account.

At an early age the cry of a baby and the cry of another baby seem to serve, either of them, as the stimulus for further crying. The sound of crying has, by the mechanism of the conditioned reflex, become a secondary stimulus for the reaction of crying. Similarly the sight of a moving hand may start the child moving his own hand, again by the conditioned reflex mechanism. At this stage, as far as the hearing or the sight of them goes, it seems to be relatively indifferent to the infant to whom the voice or the hand belongs, to itself or another. A similar state of things probably prevails with the other parts of the body. But there comes a time when the bodily reactions and the bodily parts of others are clearly set off from the infant's own bodily parts and reactions. The integration of the one goes to form the first elementary conception of the child's own personality. The integration of the other forms the conception of "a man like unto myself."

[3] See e. g. Mead, J. H., Mechanism of Social Consciousness, Journal of Phil. Psych., etc., 1912, 9, 401–406.

What then is the difference between the "self" integration and the "other person" integration? As far as the outward and visible sign goes, the two would appear to be of entirely the same calibre. Objectively, that is, the two are similar. The difference is on the subjective side. My own limbs are connected up with my own sensations, of a specific, subjective kind that do not belong to the limbs of others. But it is to be insisted again that as judged by the "distance receptors" so called, my own body and that of my neighbour are on a par, not identical but similar. My hand looks like my neighbour's, makes the same noise when it splashes the water as my neighbour's, perhaps smells like my neighbour's. But like the parsley in Bre'r Rabbit, it isn't my neighbour's.

Now, through the mechanism of the conditioned reflex and otherwise, I guide my actions by means of past experience. Originally the human being is equipped with certain reactions which are touched off at certain biologically adequate stimuli. Other stimuli reach the organism simultaneously with these originally adequate stimuli, and are given meaning, becoming secondary stimuli by Pavlov's well-known law.[4] Chaos is reduced. Thus Pavlov's dogs, which learned to anticipate food when a green light was shown them, were using the mechanism to guide their present actions by past experience.

Now of this kind of learning, the greater part takes place by means of the distance receptors. The majority of secondary stimuli are of an auditory or visual nature, and it is within the bounds of possibility that the chief function of these organs is exactly this blossoming out of their data into conditioned stimuli. Certain it is that there are at birth very few discriminated reactions functioning through them. In addition to motor reactions, the pleasantness-unpleasantness feeling and the emotions also become conditioned, that is, are given stimuli secondary to those originally operative, and again, most of this kind of learning takes place through the medium of the distance receptor.[5]

Drawing together, then, the argument up to this point, it would be expected that, at the stimulus which has produced pleasantness or unpleasantness in my own past experience, pleasantness or unpleasantness will follow again, even though the stimulus in question originally

[4] Simultaneously with the acquisition of conditioned stimuli goes of course the neural and muscular development of the organism.

[5] Thus, e. g., Watson's well known experiments on the conditioned emotional reaction, and what is known as the "experience" theory of feeling, which latter is really a conditioned reflex theory of feeling.

came from my own body and now comes from the body of some one else. Pain one would not expect so to occur, pain being of course a sensation. Now this is exactly what happens. If I hold my hand in a candle, I experience the sensation of pain together with the feeling of unpleasantness. If some one else holds his hand in the flame, I do not experience the sensation of pain but I do have the feeling of unpleasantness, because the sight of my hand in fire has in the past been accompanied by feelings of unpleasantness. Similarly, the smell of burning flesh is highly distressing to most of us, and even the other accompaniments of intense nervous shock, such as nausea, often arise vicariously by this mechanism of conditioned stimulation. Here the primary stimulus is the burning of my hand, the secondary stimulus the sight and smell of burning flesh. Sometimes, though this is abnormal, even the actual sensation of pain is produced in such cases, as in an example given by Professor Burnham, where a mother seeing an injury to her boy actually felt a sharp pain in the same place.[6]

Exactly the same thing happens for more complex situations. If I see a man at the end of a precipice, my reaction is to the physical proximity of a body to the precipice. I judge the situation according to the habits which I have acquired for my own protection. It makes no difference that I have not actually seen myself at the edge of a precipice. All that is necessary is that the integration, or, to borrow the Freudian term, the "complex" of "Body-near-a-precipice" should be touched off. This mechanism shows, of course, wide variations corresponding to individual differences. Some of us do not flinch when others are cut. Most of us rather enjoy the thrill of the tightrope walker. That is because the reactions bring a mobilizing of the resources of the body that is pleasant despite the feeling of unpleasantness

[6] The account above given of the more elementary or so called "organic" sympathy will seem at first to resemble Spencer's association theory, whereby one member of a herd of animals which have experienced, say, the emotion of fear, at a given stimulus *associates* the emotion with the expression of the emotion by fellow members of the herd. It may here be said, that even though the comparison were justified, yet the present theory would seem to be an advance over Spencer's formulation in that it gives an account of the mechanism of association. But the resemblance is more apparent than real. It is not so much the association of the emotion with the response, but rather the unreflective reaction of the organism to the situation, out of the organism's own previous experience, that is stressed in the conditioned reflex theory. Spencer's formulation, though, applies to many cases, giving a more elementary type of sympathy. The explanation of both types is the Conditioned Reflex. My attitude is different from that of the "Sich-Hineinversetzens" theory, though this also presents a parallel. See note on Adam Smith's theory (next page). Ebbinghaus, Grundzüge der Psychologie, Bd. II, s. 395 fol. has a good account of the classical positions. Here also should perhaps be mentioned the theory of Einfühlung. In the contention that our knowledge of other individuals comes from our own previous experience, the Einfühlung theory is in strict accord with that here presented. See, e. g., Lipps, Leitfaden der Psychologie, XIV, Cap.

:hat probably alternates. Hence the curiously mixed feelings with which we are apt to watch such spectacles.

When the plight of the observed organism becomes so serious that nature's first line of defence, the pleasantness-unpleasantness feeling, is no longer adequate, then the second line of defence is brought into play and the emotions called in. Thus if I myself walk too near the edge of a cliff, the situation becomes unpleasant and I move away. If, on the other hand, as I move away the ground begins to crumble beneath me, emotion will probably enter into my reaction and I become afraid, this emotion serving the definitely physiological purpose of mobilizing all my bodily resources, putting the body, so to speak, under martial law. This special reaction is the result of past experience. The general fear reaction is of course there from infancy, but we have to learn, by the mechanism of the conditioned reflex, which situations are dangerous, which is the same thing as to condition our general reactions by experience. Hence, when the complex or integration of "soil slipping beneath" is stimulated, emotion follows whether I am the agent or the onlooker.[7] Kinæsthetic and other sensations, present in the one and not in the other case, probably account for what difference there is in the two cases. Hence the general thesis, that in such cases I react to the situations of others from my own experience, and by means of the mechanism of the conditioned reflex, and show joy, fear, sorrow, etc., automatically according to the reactions which in the past have been associated with that particular situation in myself.

In still more complex actions and systems of conditioned reflexes I also judge a man by my own experience. A deeply embedded habit becomes sacred to me, and I experience a feeling of unpleasantness when it is broken (Stout and Dewey). The unpleasantness is the natural compass, keeping us within the bounds of the action which has been found in the past to be satisfactory, and registering deviation from the path, and is roughly proportionate to the strength and depth of the habit and the amount of deviation. Now if some one else in the same situation *breaks my habit*, a parallel feeling of unpleasantness is caused, again by the mechanism of the conditioned reflex. This is

[7] Compare Adam Smith, O. C., Seventh Edition, p. 10. "Sympathy, therefore, does not arise so much from the view of the passion as from that of the situation which excites it." Adam Smith had the knack of being right, though his reasons, to a later generation, often seem questionable. Here he goes on ". . . because, when we put ourselves in his case, that passion arises in our breast from the imagination, though it does not in his from the reality." The truth would seem to be that a certain situation had become conditioned to a certain response in the one case and not in the other.

the germ of a certain kind of social ban. Thus in England, to one who has always dressed for dinner and whose family has always dressed for dinner, sitting down for the evening meal en famille in morning clothes will seem an outrage, whether it be the person concerned or some one else that is the culprit. It is the very strength of the impulse leading to the deep seated habit and the fact that this habit has become so fundamental in the individual that makes the breach so painful. Similarly, if it has been my lifelong habit always to rise at six A.M., then to contemplate lying in bed till ten is unpleasant, whether I do it or some one else. Habits are chains of conditioned reflexes. The pleasantness-unpleasantness reaction seems to have for its purpose, in part at least, to call attention to any deviation from the habit. If then I observe another person in a situation that would normally be taken care of by one of my own habits, I am apt to be uncomfortable unless the situation serves as the stimulus for some stronger reaction such as those feelings connected with self gratification. In the early nineteenth century all foreigners were apt to be "nasty foreigners" in England, because they lived differently.

If further there is a person whose whole form of life, complex of habits, and personality, are alien to my own, I find that person irritating. Such a person is continually violating by proxy the habits which I have formed. This is the foundation of much married misery. Just why the untidy person should irritate the tidy one is difficult to answer on any other hypothesis. It cannot be put down altogether to the fact that the tidy person has to do the work ultimately, nor to encroachment on the personality of the tidy individual. These may sometimes play a part, but at least of equal importance seems the fact that actual feelings of unpleasantness are aroused by the acts in themselves, apart from their consequences. Thus the utilitarian school of morals would seem to be psychologically disproved in their assertion that our only criterion of actions can come from their results. At least in other people, it would seem that actions may be pleasant or unpleasant in themselves, apart from their effects. If again some one else's habits or individual actions go still more fundamentally against my most deeply ingrained habits, then the emotions may be called into action, and finally the situation becomes intolerable, as in many cases of "mutual incompatibility." This was clearly seen by Plato in his illustration of the perfectly good man, who would, he said, be scourged and ultimately crucified. It was not that the people dislike goodness, for in small doses most of us rather admire it. Rather

the spectacle of a man who systematically outrages all our most cherished habits of selfishness and other little meannesses is more than most of us can stand. We require a person that is "made human" by his faults. The Jews crucified Christ, and it is true, as the mediævalists have it, that in crucifying Christ we crucify ourselves.

The same explanation may be given of the intolerant attitude of a good many men of the mediocre type towards the artist. Such a mediocre person must above all be methodical and must conform. If the man of this class trusted to his intuition and threw aside convention he would go bankrupt spiritually and morally, and probably also materially. Nature working through the conditioned reflex has arranged it that when he throws over the conventions things are unpleasant for him. Hence the sight of broken conventions, of another reacting to a certain situation in a manner which breaks all his carefully elaborated and successful rules, is exceedingly distasteful to him. The artist is apt to flatter himself that this dislike is due to fear. This, though it may be so ultimately, is not the case at the beginning of the relations between the two, as is shown very neatly in Bernard Shaw's Candida. Here is depicted a good humoured tolerance on the part of a bluff, energetic, commonsense man for a somewhat neurotically inclined artist. The tolerance is easily seen to be the repression of a fundamental dislike, and is totally removed from indifference. Only later in the play does it develop into fear.

Thus in the simpler forms, at least, of social reaction the application of the theory of the conditioned reflex seems to provide an explanation. This is in line with two tendencies of today, namely, that which protests against the over intellectualization of psychology and that which seeks to do away with instincts and special mechanisms. Science attempts to reduce to general laws and as far as possible to eliminate the plea of "sui generis." The attempt to explain the simple social reaction by a wider principle is a step in this direction.

A STUDY OF THE INDUSTRIAL RECORD OF CHILDREN ASSIGNED TO PUBLIC SCHOOL CLASSES FOR MENTAL DEFECTIVES, AND LEGISLATION IN THE INTEREST OF DEFECTIVES

BY J. E. WALLACE WALLIN, PH. D.

DIRECTOR BUREAU OF SPECIAL EDUCATION, MIAMI UNIVERSITY
(FORMERLY DIRECTOR OF ST. LOUIS PSYCHO-EDUCATIONAL CLINIC AND SPECIAL CLASSES)

IN the article published in the April–June number of THE JOURNAL OF ABNORMAL PSYCHOLOGY AND SOCIAL PSYCHOLOGY[1] we discussed the facts, obtained in a census, regarding the sex, relationship, heredity, marriage, delinquency and truancy of the children who had been assigned to the special schools for mental defectives in the city of St. Louis during a period of twelve and a half years. The present article will consider the industrial data, and the legislation enacted in Missouri for the welfare of defective children.

INDUSTRIAL RECORD

Table 2[2] contains the occupational records, so far as known to the teachers, of nearly all of the cases. Unfortunately the teachers did not possess any exact data bearing on the wages received at the time of the report, except in a few cases, or on the length of employment, frequency of discharges, or the extent of the turnover. The problem of the industrial success of defective children who have been trained in special classes deserves the fullest investigation by the public agencies concerned with their training and care. As has already been emphasized, in order to obtain accurate employment records the services of special investigators who can trace the continuous industrial records of each employee must be available. Nevertheless the data summarized in the table is interesting in showing the great variety of jobs held in commercial establishments and factories by the pupils leaving the special schools. Almost every type of employment is represented, but only a negligible number had entered skilled trades, only two being painters and one a carpenter. Undoubtedly some were employed in skilled work in the factories. A considerable number are employed in the shoe and box factories, and a considerable number are drivers, four being chauffeurs. Only one of the girls was employed

[1] An Investigation of the Sex, Relationship, Marriage, Delinquency and Truancy of Children Assigned to Special Public School Classes. The numbering of the tables in the two articles is continuous.

[2] This Journal, 1922, XVII, 27.

in a restaurant — a fortunate circumstance, for waitresses frequently gravitate toward immoral careers. Not a single girl was employed in domestic service away from home. Only 23 were reported as doing nothing. However, it must be recalled that nothing was known concerning the careers of 436 of the children.

The records, both industrial and criminal, so far as they go, are quite satisfactory, and point to the value of the special school training.

But it is evident that the special schools have given little specific training for most of the occupations which the children have entered. Nearly all of the hand training in the special schools is generic, prevocational, or industrial in character. The manual training offered in the special schools for mental defectives has frequently been criticized because it is too generic. The question how far the special schools should go in the direction of giving specific training for the occupations in which the feeble-minded enter in a given community, deserves careful consideration. The data presented here fail to reveal any "typical" occupations which the feeble-minded enter in St. Louis. The employment records of these children furnish little clue as to the type of vocational training which should be supplied in the special schools. It would scarcely be feasible to offer training in any considerable number of occupations listed in Table 2, nor in the numerous simple operations which enter into the processes of factory production. Indeed very little trained skill or intelligence is required to carry on the simple, highly specialized, routine, monotonous operations which today enter so largely into practically all forms of factory employment.

TEACHERS' ESTIMATES ON THE PROBABLE INDUSTRIAL EFFICIENCY OF THE PUPILS NOW IN THE SPECIAL SCHOOLS, TOGETHER WITH THE PSYCHOLOGICAL FINDINGS

The following investigation, which preceded the one just described, was also made possible through the willing co-operation of the special school teachers. The teachers were asked in a questionnaire to "estimate the degree of competency which, in your judgment, the pupils will probably show in making their living and taking care of themselves after leaving school. Classify the pupils under the following headings: Self-supporting (100 per cent), 75 per cent supporting, 50 per cent supporting, 25 per cent supporting, and totally dependent (of no economic value). Group the boys and girls separately. Give the reason for your opinion (e. g., lack or presence of intelligence, lack

or presence of industry, emotional or moral stability or instability, physical handicap, etc.)." The reports covered 374 children who were enrolled at the time of the investigation, October, 1920. It will be understood that the industrial or economic classification, Table 3, merely represents the judgment of the teachers.

TABLE 3

DISTRIBUTION OF PUPILS ACCORDING TO GRADE OF INDUSTRIAL ABILITY, AS ESTIMATED BY THE CLASSROOM TEACHERS

GRADE OF EFFICIENCY	BOYS		GIRLS		BOTH	
	No.	PER CENT	No.	PER CENT	No.	PER CENT
100%	17	7.0	9	6.7	26	6.9
75%	44	18.3	22	16.5	66	17.6
50%	66	27.4	38	28.5	104	27.8
25%	71	29.4	31	23.3	102	27.2
Totally Dependent	43	17.8	33	24.8	76	20.3
Total	241	...	133	...	374	...

According to this estimate only about 7 per cent of the pupils will become wholly self-supporting, while about 20 per cent will be totally dependent. More than half were judged to possess from 50 per cent to 100 per cent of the capacity of a self-supporting adult.

In Tables 4, 5 and 6 are given the number of children in each intelligence classification, the average intelligence quotient, and the range of the intelligence quotients in each economic group. While there is a general tendency for the average quotients to decline (Table 5), the surprising thing is the wide range of intelligence quotients (Table 6) and the wide range of intelligence categories found in each economic group (Table 4). The pupils range in intelligence from merely backward to imbecile in every economic group. Not only are pupils who rate higher than feeble-minded found in every economic group but the pupils in the lowest intelligence group (imbeciles) are also found in every economic group. Pupils with an I. Q. as low as 36 (1911 scale) are reported capable of self-support, while others with an I. Q. of 84 are recorded as totally dependent. What is the explanation of these striking discrepancies between the teachers' judgments and the test results?

First, the teachers may have erred in their estimates. This is undoubtedly the explanation of some discrepancies, but there is no reliable means available for determining the extent of the teachers' subjective errors.

Second, the reasons given by the teachers for their judgments

undoubtedly explain many of the discrepancies between the estimated economic success of the pupils and their intelligence level. Only the

TABLE 4

THE INTELLIGENCE DISTRIBUTION, BASED ON THE INTELLIGENCE CLASSIFICATION, OF THE PUPILS IN EACH ECONOMIC GROUP

DIAGNOSIS	SELF-SUPPORTING	75% EFFICIENT	50% EFFICIENT	25% EFFICIENT	TOTALLY DEPENDENT
Backward	2[1]	0	2	3	0
Borderline	2	9	19	4	4
Potential Feeble-Minded	7	11	20	17	3
Borderline and Potential Feeble-Minded	9	20	39	21	7
Morons	7	17	9	19	6
Potential Morons	4	10	21	26	11
Imbeciles	1	4	11	24	63
Feeble-Minded	12	31	41	69	80
Deferred	1	7	8	4	3
Total	24	58	90	97	90

TABLE 5

THE AVERAGE INTELLIGENCE QUOTIENT OF THE PUPILS IN EACH ECONOMIC GROUP

ECONOMIC GROUP	BOYS			GIRLS			BOTH		
	1911 Scale	Stanf. Scale	'11 and Stanf.	1911 Scale	Stanf. Scale	'11 and Stanf.	1911 Scale	Stanf. Scale	'11 and Stanf.
Self-Supporting	71.0	65.1	64.6	74.5	63.8	66.5	72.5	64.7	66.0
75% Efficient	67.3	66.1	66.3	67.5	60.8	62.9	67.4	64.6	65.2
50% Efficient	63.4	65.8	65.2	71.4	63.3	65.2	66.4	64.9	65.2
25% Efficient	69.5	60.3	61.5	63.3	59.5	60.3	67.0	60.1	61.2
Totally Dependent	52.0	52.3	52.1	50.5	53.5	51.6	51.4	52.9	51.9

TABLE 6

RANGE OF INTELLIGENCE QUOTIENTS IN EACH ECONOMIC GROUP

	IN THE STANFORD SCALE			IN THE 1911 SCALE		
	LOWEST I. Q.		HIGHEST I. Q.	LOWEST I. Q.		HIGHEST I. Q.
Self-Supporting	55	to	80	67	to	76
75% Efficient	47	to	75	36	to	84
50% Efficient	44	to	79	31	to	88
25% Efficient	36	to	85	26	to	78
Totally Dependent	26	to	84	30	to	79

briefest analysis of the assigned reasons can here be given.

The reasons for judging certain pupils capable of self-support were mainly good judgment and skill, industry and skill, good intelligence, energy, and perseverance.

Some of those rated as three-quarters proficient possessed, on the positive side, intelligence, industry, energy, alertness, or ability in

[1] The figures represent the number of pupils in each group. Some pupils were admitted to the schools without examination before the clinic was established, and therefore are not classified.

manumental work. On the negative side, the pupils were reported as slow, nervous, shrewd or intelligent but morally or emotionally unstable, or merely morally or emotionally unstable, or lacking in intelligence, defective in disposition, defective in hearing, physically defective, lacking in concentration, or lacking in control.

Those rated as half supporting were recorded, on the positive side, as intelligent, and, on the negative side, as vacillating, erratic, unstable, morally and emotionally unstable, slow, childish, immature, lacking in intelligence, or industry, or confidence, or interest, or persistence, or they were intelligent but poor in manumental work, industrious but physically handicapped, or merely physically handicapped.

A few of the one-quarter efficient pupils were reported as industrious but slow, or lacking in intelligence, while one was reported as showing industrial skill. The others were inert, lazy, lacking in endurance, application, or intelligence; or were emotionally or morally unstable, or physically handicapped, or paralyzed, while one was an epileptic.

The totally dependent were lacking in intelligence or industry, were infantile, hydrocephalic, visually handicapped, paralyzed, morally and emotionally unstable, mentally unbalanced, or were in delicate health, or subject to poor nervous and motor control.

It is evident that factors such as the above vitally affect the ability of the growing child to adapt himself to his environment and must be considered in any attempt to supply scientific vocational guidance in connection with public school or other placement bureaus. In many cases such factors as the above are just as vital as the level of intelligence. An analysis of the army intelligence records has shown that the economic success of physicians does not vary directly with intelligence.[2] This result is confirmed by a close analysis of our data. Quite a number of children with a high intelligence quotient who were not reported as physically, emotionally or temperamentally defective were placed very low in the economic scale by the teachers. While the teachers probably underestimated the potential ability of many of these high grade pupils, and overestimated the ability of many low grades, it is, nevertheless, a fact that we cannot adequately diagnose a child's educational or social capacity or prognose his industrial capability by intelligence tests alone, although the intelligence level is probably the most important single determinant of scholastic or

[2] Cobb, M. V. and Yerkes, R. M. Intellectual and Educational Status of the Medical Profession as Represented in the United States Army. Bulletin of the National Research Council, 1921, I, Pt. 8, No. 8.

industrial success. The danger to be avoided in the educational and industrial classification of children and adults is the tendency to lean too exclusively on intelligence tests and scores, and to minimize the importance of comprehensive analyses.

THE CONTRIBUTION OF THE PSYCHO-EDUCATIONAL CLINIC TO THE ENACTMENT OF LEGISLATION IN THE INTEREST OF DEFECTIVE CHILDREN

In January, 1916, the director of the psycho-educational clinic and special schools was requested by Judge Rhodes E. Cave, a former president of the board of education of St. Louis, and Governor Elliott W. Major, to serve as chairman of the committee on defective children for the Missouri Children's Code Commission, and was reappointed by Governor Frederick D. Gardner in 1917 and 1919. Since 1915 the writer has proposed and drawn the bills dealing with defective children which have been enacted into law by the state legislature during this period. These bills have not only been supported by the Children's Code Commission, but by practically all of the influential organizations in the state vitally interested in child welfare and in social betterment. Among the laws which have been enacted are the following: the imposition of a penalty on county clerks for failure to report deaf and blind children to the state institutions for the deaf and blind; the admission of blind children under six years of age and deaf children under eight years of age to the proper state institutions; extending the compulsory attendance law to feeble-minded, blind, deaf and crippled children; authorization of the establishment of special public school classes or providing special instruction for blind, deaf, feeble-minded, crippled and speech defective children, and the granting of special state aid in order to promote the establishment of ungraded classes for children of borderline and backward degrees of intelligence, to which further reference will be made presently; authorizing the enlargement of the state colony for the feeble-minded, the establishment of additional colonies and temporary or permanent camps, as soon as the money becomes available, admitting colored inmates, and classifying and segregating the colored inmates, the epileptics, delinquents, prostitutes, children, and other classes of inmates, who, for their own welfare or for the welfare of other inmates should be segregated; the requirement that a prophylactic solution approved by the board of health be dropped into the eyes of a new-born infant immediately after delivery; and prohibiting the marriage of the imbecile, feeble-minded, insane

and epileptic, and providing a fine of not less than $500 or imprisonment in a county jail not exceeding one year, or both, for solemnizing such a marriage. A mandatory commitment act for the dependent, delinquent and unprotected feeble-minded was passed by the 1919 legislature, but vetoed by the Governor because of his desire to sign another bill, which repealed the same section of the old law and which provided for partial county support of the inmates in the state colony for the feeble-minded.

The legislative influence of the clinic has reached far beyond the confines of the state. Many of the laws relating to defective children placed on the statute books in other states in the Union and in foreign countries have been patterned after the Missouri bills.

THE PROVISIONS OF THE PUBLIC SCHOOL SPECIAL CLASS ACT

Under the law enacted by the Missouri legislature in 1919, and the amendments enacted in 1921, school districts are authorized to establish special classes for blind, deaf, feeble-minded, and crippled children when there are ten or more of each type in a given school district; and to provide speech corrective training, but not necessarily in special classes, for speech defectives when there are 50 or more in any school district. When the number is less than as above indicated, two or more adjoining school districts may contract with each other for the joint maintenance of a class, provided the pupils cannot be accommodated in the appropriate state institution. Boards of education are required to "ascertain annually the number of children in a district who belong to any of the above types"; to furnish transportation to and from school for such of these children "as could not otherwise attend," and to provide instruction adapted to the "varying physical and mental capacities and handicaps of the children" "under the regulations of the state department of education." School districts will "receive state aid to the amount of $750.00 per annum for each teacher employed wholly in the instruction of the pupils of the aforesaid classes," provided this amount does not exceed two-thirds of the salary paid by the local board, provided the teacher has been especially trained for the particular type of child she has been employed to teach, and provided the classes have been approved by the state superintendent of schools, who is required to inspect and approve the classes and certify the teachers for the state bonus. The above provisions also apply to classes which school boards may establish for "twenty or more children, who, while not feeble-minded, are on the borderline

of mental deficiency, or are so backward in intelligence as to be incapable of receiving proper benefit from the instruction in the regular grades," except that the state aid is only $300 per annum for each teacher.

The provisions of the compulsory attendance law are specifically made applicable to feeble-minded, deaf, blind and crippled children where special classes are provided, unless instruction is provided at home which is "equivalent at least to the instruction given the children of like development in such special classes."

It is the "duty of all boards of education and all superintendents of schools and of the state superintendent of schools to enforce the provisions of the law."

The law further authorizes the State Board of Charities and Corrections to "take charge of and provide for the proper training of feeble-minded, deaf, blind, and crippled children under the age of sixteen years who have not attained the eighth grade in school," and who have not been supplied with appropriate instruction in special public school classes or at home. The expense for transportation, education and maintenance shall be assumed by the State Board of Charities and Corrections and charged to the county in which the child resides when the parents cannot bear the expense. County superintendents of public welfare, county superintendents of schools and the superintendent of schools in the City of St. Louis are required "to report to the State Board of Charities and Corrections all children within their counties and the City of St. Louis who come within the provisions of this section." Attorney-General Jesse W. Barrett made the following ruling with respect to this section on April 18, 1921:

"It is hard to believe that any person fit for the position of County Superintendent of Schools would wilfully refuse to perform this service for an unfortunate class who are so particularly deserving of his attention. If failures have occurred in the performance of this duty, surely they must be due to a lack of understanding on the part of the County Superintendents. If any County Superintendent still neglects or refuses to make the report after the matter has been called to his attention, I suggest that you look at the provisions of Section 11158 which makes such a failure or refusal a crime punishable by conviction and fine. That section will give us ample power to take care of any County Superintendent or other officer who shall wilfully neglect or refuse to perform any duty or duties pertaining to his office under that chapter of the law.

"In addition, there are, of course, the ordinary remedies in the way of removal from office on account of neglect of duty.

"I think you should see that this law is rigidly enforced."

According to the regulations prepared by the writer for the state department of education,[3] the classes will not be approved unless the pupils have been assigned as the result of a proper physical or psycho-educational examination, or both, unless effort is made to secure proper remedial treatment, unless proper records are kept of all examinations, findings, assignments and transfers, unless the classes are properly organized with respect to methods and contents of instruction, supplies and equipment, and unless the teachers have secured in addition to the standard normal school course not less than eight semester hours' credit in courses especially designed to prepare them for the particular type of work which they are to do.

Pupils cannot be assigned to the special schools for mental defectives unless they "have been properly individually examined by means of standardized tests of intelligence." "Children with less than a three-year mentality or less than an intelligence quotient of 30 per cent, and with more than a nine-year mentality or over 70 per cent of intelligence, and children who have the capacity to do satisfactory all-round third grade work, should not be admitted to these classes." An investigation must also be made before admission of "the child's physical condition, his personal, family and school history, and the influences of his physical and social environment."

Children to be admitted to ungraded classes for the borderline and backward must "first be properly examined by means of standardized tests of intelligence and may range in capacity from 65 per cent to 90 per cent of normal intelligence. Some children with 65 per cent of intelligence or more may prove clearly to be feeble-minded, and therefore should not be assigned to the ungraded classes, but to the special classes for the feeble-minded. But children of doubtful mental status, who occupy a 'borderline zone' ranging from an intelligence quotient of from 65 per cent to 80 per cent, should be assigned to ungraded classes for special aid and careful observation. For this type the classes will serve the function of 'observation classes' or 'observation wards.' "

In order to carry out the provisions of the law — and to neglect to do so would constitute a violation both of the letter and of the

[3]See Suggested Rules for Special Classes, Educational Administration and Supervision, 1921, 447-458.

spirit of the law, and the sentiments of all the progressive social and educational forces of the commonwealth — so far as relates to feeble-minded, borderline and intellectually backward children, the following steps must be taken:

1. A plan must be devised for an effective, periodic system of preliminary reports and the proper intelligence examination of at least 4 per cent or 5 per cent of the pupils in the grades who are the most deficient in intelligence. The state law is specific in the requirement that boards of education must determine annually the number of defective and subnormal children in all the schools of a given school district. The voluntary system of reporting suspected mental defectives has proved a failure whenever tried. Under that system one-third of the elementary schools in St. Louis formerly failed to report a single child for the special schools, while 222 elementary schools in New York last year, with an enrollment of 32[illegible],000 pupils, did not recommend a single child for the classes for the feeble-minded. At least two preliminary reports a year should be sent to the psycho-educational clinic from each elementary school, the boys' classes, open air schools, and the school at Bellefontaine Farms. It is very probable that several certifiable ungraded classes could be established in all of these schools were the pupils properly examined. The financial aid which would thus be received from the state for the conduct of these classes would not be inconsiderable. In fact, examinations ought to be made of all the boys at the Farms, all the boys considered for the boys' classes, and all the juvenile court cases for which the board now provides facilities for physical examinations. The data submitted on the preliminary blanks may be limited to very few items: the child's name, exact date of birth and age, the total time spent in school in years and months, the grade in which the child is registered, and the grade in which he can do successful work in reading and arithmetic. Upon the receipt of these lists of mentally retarded pupils, an examiner should be sent to the school to test the pupils by means of a group test of intelligence. The pupils who are found to be the most retarded according to the teacher's rating and the group intelligence score, should also be given an individual mental examination. This examination may be given in the school if a light, quiet room is available, so that the examination may be conducted without interruption or interference. As the result of this preliminary investigation, some pupils will be assigned to the ungraded classes, while others will be selected for the more complete investigation required by the state

regulations for the candidates for the special classes for the feeble-minded. In other words, pupils who rate below a certain I. Q. will be given a further examination in the psycho-educational clinic, after the receipt of the more complete data on the usual forms. Special problem pupils should also be given the more complete examination at the request of school officials.

2. In order to carry out the above plan, the psycho-educational clinic should be provided with several assistants. It is recommended that these positions be filled by transferring teachers in ungraded classes and special schools who have taken the courses on the education and examination of subnormal children and in mental tests offered by the director of the clinic in the Harris Teachers College. This would render it possible to meet the exigent needs at an insignificant cost.

3. Due consideration must be given to the requirement of the law that feeble-minded children who have been examined and certified be placed in special classes. Greater effort should be made to effect the transfers not merely to satisfy the demands of the law, but because the transfer is clearly in the interest of the child himself and the great mass of normal pupils who are greatly handicapped by the presence of defective pupils in the regular grades. Moreover, the principals and teachers rightly insist, after having gone to the trouble of filling in the necessary blanks, that they be relieved of the burden of trying to adjust the regular instruction to pupils who are altogether incapable of doing the work in the grades.

That it is possible to secure the transfer of the vast majority of the pupils assigned to the special schools has been demonstrated. During the period from 1914 to 1916, when the clinic had complete charge of the transfers only about 13.5 per cent of the children assigned failed to enter the special schools. During this period the transfers were enforced unless there were valid reasons to the contrary. During the last five years transfers have not been required when the parents have objected. The result is that the percentage of children who have not been transferred increased to 25.2 per cent in 1917–18, to 37.5 per cent in 1919–20, and 38.7 per cent in 1920–21. It is noteworthy that the worst record has been during the last two years, when the provisions of the state law require the transfer of pupils who have been properly certified and assigned.

An analysis of the individual cases has shown that there is no valid reason for the non-transfer of the vast majority of these pupils. There

are, it is true, quite a number of children who have not been transferred during the last two years, because they have been unable to get to the schools. But this is no longer a valid excuse, as the law now requires that proper transportation be provided for feeble-minded, blind, deaf and crippled children who cannot otherwise get to the special schools.

SUPPLEMENTAL NOTES ON THE STAMMERING PROBLEM

BY ERNEST TOMPKINS, M. E.

PASADENA, CALIFORNIA

IN *Some Notes on the Stammering Problem* in the JOURNAL for June–September, 1921, Dr. Ralph Reed says: —

"The most striking thing that to me was elucidated, was the fact that a series of stammerers will eventually contradict almost every theory that has ever been set forth with regard to the nature of the disease. I believe that there have been more absurd and illy digested theories of stammering set forth than with respect to almost any other psychoneurotic disorder. I studied Bluemel's *Stammering and Cognate Defects of Speech*, very carefully years ago, and I found nothing in it of any value to me whatever. I can say the same of practically every theory of this disease that has been since advanced, including the work of both Swift and Scripture."

This statement, valid in the main, is worth serious consideration. Why further mislead the public with absurd and illy digested theories of stammering? Why further discredit the already seriously discredited integrity of the press? Why further contribute to the suffering caused by the leading speech disorder? We can not stop the publication of mistaken views; but if every one conversant with the subject would endorse the valid portions and revise the invalid portions we would be on the way to real accomplishment. Let us do this with Dr. Reed's article, in which he has compressed a remarkably large amount to be endorsed. Indeed, from his observations we may derive the theory which he seeks.

It would be desirable to quote verbatim; but that procedure would make this article objectionably long, so we will condense, endeavoring as much as is possible to retain Dr. Reed's exact meaning. Here follow the views endorsed: —

(1) The stammerer has a sense of inferiority.
(2) He has a tendency toward spontaneous recovery.
(3) His difficulty is not restricted to vowels or to consonants or to particular letters of either class.
(4) Stammering varies in intensity from day to day or from hour to hour.
(5) Inconsequential remarks or subordinate clauses are often fluent.

(6) Stammering is not always diminished in the presence of friends or at home or vice versa.
(7) It varies in most unusual and extraordinary ways.
(8) Distraction produces temporary fluency.
(9) Stammering schools use distractions such as rhythm or change of voice tone.
(10) These distractions one and all are to be condemned "absolutely and completely."
(11) The stammerer's attention should not be attracted to his speech in any way.
(12) He can (at times) speak as well as any one.
(13) The disorder is not essentially a speech defect.
(14) The stammerer may speak fluently by waiting for recovery of his confidence.
(15) The disorder is not alone a mere habit fear.
(16) The mechanism of the disorder "is nothing more than an undue amount of energy overflowing into the muscles of speech."
(17) "If some of this energy can be diverted he" (the stammerer) "can speak with freedom."
(18) "The more important the thought he desires to utter, naturally the more certain the speech defect manifests itself since he, because of anxiety, directs more energy toward the physical mechanism of speech."
(19) Normal speech is automatic.
(20) "This is the stammerer's barrier. He can never forget, consciously or unconsciously, what he considers the necessity for speech effort. A million associations with speech failure have determined this."
(21) Quick cure is not to be expected.
(22) "All attention directed toward the speech mechanism itself is definitely contra-indicated."

For brevity in the derivation of our theory from these observations, let us follow the method of Kepler, which was to surmise the theory and reject it if it failed to embrace the observations. In this case rejection is unnecessary, for the speech-interference theory, which Dr. Reed overlooked, is thoroughly developed.

This theory is: —

(A) A temporary interruption to normal speech.

(B) induces a conscious speech effort, which for want of proper direction,

(C) blocks the automatic speech, creating a fear of further speech difficulty which

(D) prompts further effort to overcome the imaginary difficulty, and

(E) intensifies the speech doubt.

A review of the list of Dr. Reed's observations shows this theory to embrace every one of them, which is the test of a theory. ("When we say that we understand a group of natural phenomena, we mean that we have found a constructive theory which embraces them." Albert Einstein. Science Jan. 2, 1920, p. 8.) The interested reader may make his own review, for lack of space precludes the making of one for him here. We may in passing call attention to the automatic nature of speech (19); the stammerer's interference with his speech (16), (18), (20); fluency following distraction from the speech doubt (8); variation in intensity, not according to sounds and places, or character of the auditor, but according to the stammerer's own attitude toward his speech with respect to those circumstances, (3), (4), (6), making that variation appear most unusual and extraordinary, (7); and finally the tendency to spontaneous recovery, (2), due to the fact that circumstances which afford much distraction or do not require what the stammerer calls "difficult" talking, obviate the stammering and recovery gradually sets in. Not only does this theory embrace every observation in the list but all valid observations of stammering.

Let us pause in the discussion and consider what is to come. Up to this point we have approved, and approval seldom engenders opposition. But when it comes to disapproval the case is apt to be different. Dr. Reed or his adherents may say, "We no longer follow you." So it is necessary to make plain the ground of our disapproval. We have already shown that the speech-interference theory embraces many of Dr. Reed's observations, in fact, most of them. It develops that his other observations to be noted do not conform to the theory; so retention of these latter observations necessitates rejection of the twenty-two already given — an impossible course. In short, the revision of the observations to be noted is an inevitable result of the acceptance of the others.

Stammering does not sometimes begin at the beginning of speech as Dr. Reed thinks. It is true that we have occasional reports that

it does. But these reports are hearsay testimony of the patient or his friends or parents. Since the affection generally begins between the ages of 3 and 7 the patient is not a competent witness, and since the inducing causes are frequently common occurrences such as falls, frights, ticklings, the particular occurrence responsible for the origin of the trouble might easily be overlooked; so the testimony of friends or parents cannot be accepted without question. On the contrary, many of the inducing causes are too serious to be readily overlooked, such as debilitating sicknesses, convulsions, dog bites and so on. The histories of these cases are so definite and so thoroughly in correspondence with the speech-interference theory that we are justified in believing that every inducing cause is of the same class, namely, an accident or incident which temporarily interrupts normal speech and invites the conscious misdirected effort which constitutes the stammering spasm. But the insurmountable obstacle to the "always stammered" cases is the intermittence of the disorder. Stammering is an impediment to speech. Speech is there, but it is impeded at times. Dr. Reed calls attention to the fact that the stammerer has speech. Hypnotize him and he is fluent; frighten him sufficiently and he is fluent: there are many ways of proving that he has speech. So, if he stammered always — that is, stammered from his first attempts to talk — he obtained his speech without learning it. In short it was a miraculous gift. It is bad enough to be obliged to dissipate the myths in the field of stammering, but it is crowding the mourners to expect disproof of alleged miracles.

Dr. Reed calls stammering a "disease," a "psychoneurosis" and "a symptom of a general neurotic and introverted personality." In the contradiction between the classifications of disease and symptom we find the element of disintegration characteristic of every disease theory. But he is even more indefinite. He says, "Might not any factor tending to produce an inferiority complex or an introverted attitude favor the production of the stammering neurosis? I have investigated carefully, the ordinary possible associations and fixations one might suppose would be productive of stammering and so far, I have been unable to trace any particular stammerer's difficulty to any special incident." Now let us clear up this doubt. Stammering does not arise from an inferiority complex nor from an introverted attitude, but the sense of inferiority and the selfconsciousness arise from the stammering. When I vainly tried to ask for a person at a door and the maid laughed at me, I felt inferior even to a domestic;

and the next time I stood at a door waiting for an answer to my ring I felt conscious of the possibility of more humiliation. In short, stammering is not a disease nor yet a symptom of a disease. It is a thoroughly understood complex habit, hitherto unclassified — the obstruction of an automatic process by a panicky, misdirected, conscious effort. And Dr. Reed's comparison of it with other apparently similar affections is highly important. It is inconceivable that there is only one disorder of its class, especially in view of the fact that so many human processes involve both automatic and conscious direction in almost indistinguishable demarcation.

Dr. Reed considers psychoanalysis to be of some application to stammering, although not so much as might be expected, as witness his remark, "I still believe that psychoanalysis will answer many questions with regard to stammering, but I do not believe that it solves the problem of this disorder in anything like the complete and clean-cut way in which it has succeeded in solving the problem of many of the other psychoneuroses." Let us consider the application of psychoanalysis to stammering. First comes its value as a means of determining the stammerer's hidden thoughts. If the process succeeds it will reveal that he thinks he has a defect in his speech and attempts to overcome the defect; but of what satisfaction is that revelation? Second, comes the application of the Freudian theory to stammering. But there is no application. Dr. Coriat himself has admitted the difficulty of finding the complex. Certainly there is difficulty, for no complex exists. Stammerers may possibly have complexes, just as some have cardiac leaks, and some enlarged thymus, and some traces of past rachitis, and so on, and so on; but neither complex nor any of the rest have any connection with their stammering. Third, comes the therapy; but with no complex, of what application is the therapy? Truly it is applied and truly it appears to produce results; but every therapy appears to produce results in stammering. No affection is more subject to suggestion, so every method under the sun appears to be efficacious at first — and then, relapse. Psychoanalysis is no exception to the rule. It has been thoroughly tried. Bluemel, Kenyon, Bryant, Makuen and many others condemn it. Not a few of its former exponents have receded from their advocacy of it, Coriat and Guggenheim among them. And Brill's very conservative remarks indicate anything but success for it. He says, "Too much time should not be devoted to routine practice. Most of the stammerers should be treated as average

psychoneurotics. The prognosis in stuttering is usually bad. The treatment is very lengthy and trying. The permanency of the cure cannot be guaranteed." (Jour. Nervous and Mental Diseases, Nov. 1920, p. 423.)

Why longer mislead the poor stammerer with false hopes of cure? Stammering is as tenacious as memory, for it depends on it — memory of thousands of speech failures and of the humiliation consequent to them. I wonder sometimes that I was not consumed with the heat of my shame. Nothing will obscure those memories but speech success. Not one of the thousand-and-one tricks and schemes for banishing the affliction has any efficacy, and most of them intensify the trouble. The stammerer must back-track to get out. He got in by speech failure, he can get out only by speech success. He must desist from further speech failure, which is conscious interference with his speech, that is, stammering. Then what talking he does will be normal, because he has normal speech. It was his mistaken interference with it which made it appear abnormal. But he desires to recover as rapidly as possible. Then he must cultivate the environment which affords much fluent talking. How otherwise can he overcome the effects of years of stammering? He should talk all day long; or lacking such opportunity he should talk as much as is possible. Here is where the need for assistance comes in; not by the teaching of injurious respiratory and articulatory exercises and other alleged panaceas, but by keeping the stammerer in the spirit and in the situations which induce fluency. The stammerer himself cannot expect to make the progress which he will make under skilled assistance. His mentor can inquire into his daily routine and revise it so that inducements to stammer will be reduced to a minimum without unduly inconveniencing any one. The patient has to be brought to a determination to avoid stammering — a difficult task, for many confirmed stammerers prefer stammering to the alternatives of writing, making signs, spelling or foregoing an intended remark. The patient needs frequent encouragement; for progress is slow at best. It is the average of the fluency of a happy day and the returned doubts of a discouraging day; and without the support of an advisor the patient is likely to abandon himself to his old habits. The associates of the patient need to be instructed as to the proper attitude toward him. I have in mind the wife of a stammerer. She desired to help her husband to recovery of his speech, but in the interval in which he was hesitating for calmness to enable him to proceed fluently she

would break in with an inconsequential remark of her own — improving the time, truly, but not improving her husband's speech, because he would hurry to keep the word and would tend to stammer. His wife had to be told plainly that her husband was to have, without interruption by anybody, all the time he desired to take. Every stammerer has "difficult" situations to encounter, such as asking the street car conductor for his transfer, selecting seats at the box office, meeting election requirements, and so on to great length. Every such situation should be considered and arrangement should be made that each one, instead of contributing to the speech doubt, shall contribute to speech confidence. The adoption of such rational and beneficial measures will raise the treatment of stammering to a much higher plane than that on which it rests today.

CAN INSTINCTS BE GIVEN UP IN PSYCHOLOGY?

BY EDWARD CHACE TOLMAN

UNIVERSITY OF CALIFORNIA

MR. KUO'S recent most stimulating article, "Giving up Instincts in Psychology,"[1] implies two theses: (1) that our current definitions of instinct are self-contradictory and arbitrary, and (2) that a more careful analysis and observation would indicate that there are no instincts (in the sense of inherited tendencies) but that what we have been wont to call instincts in the past are really only habits.

Of the first of these theses I shall have nothing further to say. I am in the heartiest sympathy with it. It seems, in fact, to judge from the tenor of recent articles, to be rapidly gaining a widespread acceptance. Nor am I temperamentally, and before the fact, opposed to the second thesis. For it may very well be that further observation and study of just what does take place in the early days and years of the organism's development — such a further observation and study as that for which Mr. Kuo himself makes a plea — will substantiate his doctrine of the completely acquisitional character of instinct. I do wish, however, to outline what seem to me to be the alternative possibilities. For I think the outlining of such alternatives will help to make the issue clearer until such time as actual observation shall have come to the rescue and decided it.

I shall begin first by briefly summing up Mr. Kuo's theory in my own terms. It seems to me to have two parts: (1) the assertion that even in the case of the "units of reaction"[2] the connections between response and stimulus are acquired and not innate; and (2) the further hypothesis that, in the case of those more complicated forms of behavior, built up out of these "units of reaction" (which in the past we have been wont to call instincts) the form and pattern of the combination are also not innate but acquired. In a word, the doctrine seems to be summed up by saying that it implies that in the unlearned organism the nervous system is, as far as any innate sensory-motor connections are concerned, a completely uncharted sea.[3]

[1] Journal of Philosophy, XVIII, November 24, 1921, pp. 645–664.

[2] Op. cit. p. 658.

[3] This perhaps would be asserted by Mr. Kuo only as regards those "units of reaction" which get combined into 'instincts' or habits. For he does seem to admit the functioning of certain independent elementary acts (op. cit. p. 664, i. e., relatively fixed reflexes) which are not of a sort to get integrated into more complicated reaction systems and to which he perhaps would allow a certain amount of innate givenness of the original sensory-motor connections.

Let us now, however, note certain further implications. How, we ask, if all actions both simple and complex are acquired, does it happen that much the same types of action get built up in all the different individuals of one and the same species? The answer of Mr. Kuo to this would seem to be threefold: (1) The different individuals of the same species all have the same sense-organs and hence must all be innately responsive to the same general types of stimulus. (2) They all have the same action systems (response organs) and hence their responses must necessarily fall into the same general kinds, and (3) they are all subject to much the same essential environment and hence are necessarily driven to similar types of complex behavior.[4] As regards (1) and (2) I have no criticism and I think Mr. Kuo has done us a great service in indicating their importance. Undoubtedly part of that which is distinctive of each species, and which we have been wont to attribute to the possession of special instincts (i. e., innate sensory-motor connections) is really the outcome merely of the possession of the specific sense-organs and response-organs peculiar to the species in question. But as regards (3); how, I would ask, if as Mr. Kuo's fundamental assertion states, there are no original connections of response to stimulus, can the presence of either the same environment or of different environments in any way determine the type of behavior the organism shall develop? To assume that the environment "demands" or calls out particular types of behavior[5] is to assume some fixed connection between type of stimulus and type of response. But the original presence of any such connections has been denied. This is a difficulty which as far as I can discover is nowhere resolved in Mr. Kuo's article. Fortunately, however, for the real understanding of the problem in question, the writer has had the advantage of personal conversations with Mr. Kuo, and, as a result of such conversations, he concludes that the latter really holds an additional hypothesis not stated in the article. This hypothesis maintains that although all responses *are* originally random, there is an operative factor which determines that certain ones of them shall soon get learned (i. e., attached to specific stimuli). This operative factor is the simple one that, if a random response succeeds in separating the organism from the exciting stimulus, the response gets learned;

[4] Op. cit. pp. 653, 661, 662.

[5] "Our daily acts are organized as a result of environmental demands." Op. cit. p. 661. "The fact that the nature of environment determines the organization of reaction systems accounts for both social solidarity and individual differences in occupations and in types of behavior." Op. cit. p. 662.

otherwise not. This explains trial and error learning.[6] Having once accepted this further principle Mr. Kuo can go on to assume that when a unit response has once thus been learned it thereafter constitutes a specific connection of response to stimulus which can serve as the foundation stone in the building up (by the principle of the conditioned reflex) of more complicated adjustments. Accepting this principle as an addition to Mr. Kuo's thesis, we can sum up his entire doctrine by the following four points: (1) All the original unit acts are random (i. e., completely unattached to specific stimuli). (2) They do, however, soon get specifically attached to stimuli as a result of trial and error learning (i. e., if they are successful in separating the organism from the exciting stimulus). (3) When they have once thus got attached they are used in the building up, by the principle of the conditioned reflex, of those more complicated forms of behavior which we are wont to call "instincts" and habits. And (4) as the complement of (3) it is assumed that these more complicated forms of behavior themselves are acquired and never innate.

Let us turn now to the presentation of what, before further empirical observation shall have decided the issue, seem to me the possible alternative theories.

FIRST ALTERNATIVE

The first theory I would suggest would be one diametrically opposed to Mr. Kuo's. It would assume (1) that in the case of the original unit acts the connections between stimulus and response are fixed, and (2) that this also holds in the case of the more complex forms of behavior. As regards instincts, then, everything would be given and nothing learned. This, obviously, is the 'inherited-reflex-pattern' type of theory. And we need not dwell upon it further. Although it is still an a priori possibility the evidence seems to be fast accumulating against it even for the lower animals. See, for example, the work of Swindel[7] on nest building; of Craig[8] and Whitman[9] on the sexual anomalies of pigeons; of Hamilton[10] on the sexual anomalies

[6] Op. cit. p. 659. "The process of the integration always involves selection and elimination."

[7] Swindel, E. P., Amer. Jour. of Psychol., 1919, 30, 180.

[8] Craig, W., Jour. of Animal Behav., 1914, 4, 121–133.

[9] Whitman, C. O., "The Behavior of Pigeons," Carnegie Inst. Washington Publ., No. 257, 1919, p. 28–.

[10] Hamilton, G. V., Jour. of Animal Behav., 1914, 4, 295–318.

of monkeys; of Scott[11] on the largely acquired character of bird songs. (To some of these Mr. Kuo has already referred.)[12] All this work shows a surprising ununiformity and variability in the instincts even of the lower animals.

SECOND ALTERNATIVE

The next possible type of theory which occurs to me is one, which, while it would admit the non-original character of the more complicated forms of behavior would posit fixed innate stimulus-response connections for some at least of the 'units of reaction.' The complicated forms of response would then be built up, in the form of habits, out of and upon these simpler units.

Such a view may perhaps be identified with a certain feature in McDougall's well-known doctrine. In so far, that is, as he defines his primary instincts chiefly in terms of certain original simple stimulus-response sequences as, for example: running from, in the case of fright; striking at, in the case of fear; etc., and assumes, further, that it is upon the basis of these simple sequences, as such, that the later more complicated forms of behavior get built up; such would certainly seem to be his view.

It must be pointed out, on the other hand, however, that in so far as he emphasizes not these original simple stimulus-response sequences but rather the emotions as the permanent and central things and as constituting the cores for the later more complicated responses, his theory would be of a different type — of a type, it may be noted in passing, which, when translated into our language would be related to, if not identical with, the third alternative, to be presented below.

Another writer, whose theory sometimes at least seems to fall under this second alternative, is Kantor. In his article "How Do We Acquire Our Basic Reactions?"[13] we find him speaking of "basic forms of actions as infant behavior (e. g., vocalization whether considered as random acts or *instincts*) which soon become integrated into more complex responses."[14] Now, in so far as he accepts the latter of his two alternatives and assumes that the 'basic forms of actions' are

[11] Scott, W. E. D., Science, 1901, XIV, 522.
" 1902, XV, 178.
" 1904, XIX, 154.
" 1904, XIX, 551.
[12] Op. cit., p. 657.
[13] Psychol. Rev., 28, 1921, 328–355.
[14] Op. cit., p. 328 (Italics mine).

instincts; i. e., involve innate stimulus-response connections, his theory seems to fall into the type we are here considering. It should be observed, however, that in so far, on the other hand, as he accepts the former of the alternatives and assumes that the 'basic forms of actions' are 'random' his theory becomes, on the contrary, identical with Mr. Kuo's. And it has to be admitted that in by far the larger portion of this particular article he does seem to be accepting this former alternative. For example, in his conclusion we find him asserting that "the number and kind of reaction systems we acquire depends entirely upon the kind and frequency of stimuli with which we are in contact, plus the reaction systems previously *acquired.*"[15] On the other hand, it is to be pointed out, finally, that in other articles, both earlier and later, he leans pretty decidedly toward the view here presented of the innate non-acquired character of the instinct elements.[16]

Lastly, as a third possible representative of this Second Alternative let me suggest Thorndike. For it will be remembered what great emphasis he lays upon the simplicity of all that we may be supposed to possess in the way of innate responses.[17] He lists some forty-two simple innate connections between stimulus and response. And anything more complicated he apparently would assume to be built up upon the basis of these.

THIRD ALTERNATIVE

One remaining type of theory suggests itself to me. It would differ from Mr. Kuo's primarily in two features: (1) while it would also admit that the original 'units of reaction' are random, it would deny that they are completely random, but assert rather that their randomness is *usually* restricted within certain fairly definite and discoverable limits. Thus, when an organism is presented with a new stimulus for which no response has as yet been learned this theory would suppose, not as does Mr. Kuo's that the animal will respond with *all* the acts of which it is capable, but rather that it will ring the changes upon only a relatively small and definite number of such random acts. When, for example, a young infant is suddenly dropped

[15] Op. cit. p. 354 (Italics mine). It is to be observed that in so far as he adopts this other theory he is equally lacking as was Mr. Kuo in any expressed statement of an underlying principle whereby changes in the "kind and frequency of stimuli" (Op. cit. p. 331) can come to effect the building up of fixed responses out of initially random ones.

[16] Cf. "A Functional Interpretation of Human Instincts," Psychol. Rev. *27*, 1920, pp. 50–72, especially 56 ff. And "The Psychology of Reflex Action," Amer. Jour. of Psychol., 33, 1922, pp. 19–42, especially 38 ff.

[17] "Educational Psychology," vol. 2, Teachers College, Columbia University, 1913.

from a slight height the theory does not suppose, as would Mr. Kuo's, that the child will coo and smile and make sucking movements *as well as* cry and draw in its breath, but merely that it will tend primarily to do the latter two.[18] The theory would not necessarily deny that there might be occasions where, if the stimulus were strong enough and 'relief' was not achieved by any of the first set of random acts, the child might eventually do *all* the things of which he was capable. It would merely assert that for any ordinary strength of stimulus only a certain somewhat restricted number of random acts tends to occur. (2) The second feature in which the theory would differ from Mr. Kuo's consists in the fact that instead of assuming merely one ultimate type of success (viz., the simple removal of the organism from the given exciting stimulus) it would assume a number of different types of success. It would assume, further, that the nature of these successes would be in each case related to the underlying factor which also explains which particular set of random acts tends to occur on that occasion. The explanation of the mechanism of this underlying factor depends upon the assumption of what we will call "driving adjustments." These are to be conceived as internal behavior-sets originally and innately set off by particular types of stimulus. These adjustments tend to release particular groups of random acts, which ordinarily ring the changes upon each other in a purely haphazard fashion until some one finally occurs which presents the organism with some new stimulus or condition which automatically leads to the disappearance of the driving adjustment itself. Thus, for example, suppose the driving adjustment is that condition which on its introspective side we call hunger. This driving adjustment releases a series of random acts — not ordinarily all the random acts of which the organism is capable, but only a certain discoverable set — seeking movements of head, face and lips, etc. These continue in random fashion until some one or combination of them occurs which achieves food so that the driving adjustment itself thereby becomes removed. This act or set of acts constitutes *success* and tends to be learned; i. e., to become specifically attached to the whole situation (to the hunger adjustment itself and to the type of external stimulus then present). It is to be seen, therefore, that it is the nature of the driving adjustment which determines both which acts shall be released and which one or ones shall constitute success. And when once these simple specific stimulus-response connections have been formed then the

[18] Cf. Watson, J. B., "Psychological Review," 26, 1919, 165–196.

building up of more complicated forms of behavior in terms of habit can be easily accounted for.

To sum up, then, the theory as so far expressed; it assumes (1) that, whereas there are no innate connections of external response to external stimulus, there are innate connections of specific types of driving adjustments to particular types of stimuli, external or internal; (2) that these driving adjustments tend to release particular sets of random acts, and (3) that that random act or set of acts get learned; i. e., specifically attached to the external situation and the driving adjustment in question, which leads to the removal of said driving adjustment.

But there is another important feature of the theory yet to be emphasized; to wit, that these driving adjustments while they are to be assumed as ultimately explainable in terms of underlying physiological sets, are nevertheless, primarily identifiable and describable, not in physiological, but in behavior terms.[19] And when thus described they are found to be stated primarily in terms of the abstract natures of the successes which they respectively predicate. Let us, for example, for purposes merely of illustration, list tentatively the following as possible original types of driving adjustment: flight, pugnacity, repulsion, curiosity, parental instinct, self-assertion, self-abasement, hunger and sex.[20] The list is for illustrative purposes only and does not claim special validity or exhaustiveness. Let us, now, examine it. It is to be observed that in each case an identifying description can be made simply in terms of the abstract type of success predicated quite irrespective of the specific object responded to and the specific detailed nature of the response. Flight equals getting away from an object; pugnacity — attacking an object; repulsion — avoiding an object; curiosity — manipulating an object; parental instinct — caressing an object; self-assertion — determining the behavior of an object; hunger — eating an object; and sex — arousing activities of the sexual organs by means of the presence of an object. The particular objects fled from, fought, avoided, etc., will depend upon the chances of the first arousal plus learning, and, similarly, the detailed nature of the response itself, whether it consist of running, walking, hiding, etc., in the case of flight; striking, kicking, biting, etc., in the case of fighting; pushing, turning up nose, turning away face, etc.,

[19] Indeed we usually do not know what the underlying physiology is.

[20] It may be noted in passing that I have simply taken McDougall's seven primary instincts and added hunger and sex.

in the case of repulsion, will likewise be a matter of the chances of the first arousal plus subsequent learning; and so on. But the nature of these different responses will always be reducible to the same abstract terms in which the underlying driving adjustments themselves are to be defined.

Another feature about the doctrine which thus appears is that, as thus behavioristically defined, these adjustments are found to be stated in purposive terms. They are defined in terms of the ends they achieve. This means, not that those ends are necessarily before the organism itself, but rather that they are before us the observers. They are the conceptual pegs upon which *we*, for convenience, hang *our* descriptions. When we observe an organism time and again running, hiding, flying, walking from objects, we descry a similar element in each of these behaviors which for descriptive convenience we may identify in the teleological terms of "getting away from an object." It is to be observed, however, that this need of teleological language by no means implies that all such behavior cannot be explained physiologically in a purely causal fashion.

Finally, one more feature of the theory must be noted; viz., that just as Mr. Kuo's does, it also avoids the assumption of any mysterious degree of 'pre-established harmony' between the specific nature of the environment which the young organism is to be born into and the specific nature of the responses which he is to make to it. It does suppose, however, that the driving adjustments are *innately* set off by particular types of exciting stimulating conditions; and it does suppose, further, that they are innately neutralized by certain other particular types of relaxing stimulating conditions. So that it does assume enough pre-established harmony such that, if the organism's driving adjustments are to achieve success, the given exciting stimulating conditions will usually, and in the main, be connected with somewhere nearly the "right" driving adjustments, and such that somewhere near the "right" environmental rearrangements will produce the requisite relaxing stimulating conditions. For example, it does have to assume (i. e., if the organism is to survive) that the original innate exciting stimulating condition for the driving adjustment of flight shall not innately be attached to such environmental conditions as the protective presence of the parent, but rather to such environmental conditions as those of loud sudden disturbances; and similarly, it does have to assume that the original and innate relaxing stimulating condition for this same adjustment of flight shall not

innately arise from the nearer presence of the original frightening object, but rather from a decreased intensity of it; and so on. But whether the original frightening object shall be gun, loud voice, or what not, or just in what mode of locomotion successful getting away shall prove to consist, is not pre-established but is a matter dependent upon the chances of experience. Finally, the amount of pre-established harmony which is thus assumed seems to be no more than can easily be accounted for on the basis of evolution.

We may now, then, once more sum up the features of this third type of theory. (1) Whereas there are no innate connections of external response to original stimulating condition, there are innate connections of specific driving adjustments to original external or internal stimulating conditions. (2) These driving adjustments tend to release particular sets of random acts. (3) They also set a particular goal for the random acts in that these acts tend to continue until some one occurs which provides a stimulating condition which *innately* relaxes the driving adjustment itself. (4) These driving adjustments are definable in terms of the purely abstract types of success which they predicate. (5) As so defined they necessarily involve a teleological use of language. (6) The theory predicates no mysterious degree of pre-established harmony between the nature of the environment and the nature of the organism.[21] This theory, it seems to me, is in all essentials the one advocated by Woodworth.[21] And to him, I believe, belongs the credit for having first suggested it. It must be observed, however, that his discussions of what we have been calling the driving adjustments are almost entirely in terms of the physiology underlying them. This restriction to physiology has prevented him from realizing the possibility and importance of their purely behavioristic definition and that they can be so defined even when their underlying physiology is not known.[22] It is to be noted, further, that Perry also in a series of extremely original and stimulating behavioristic studies of Purpose and Knowledge has evolved a doctrine which, when worked out in its psychological (as distinct from its epistemological or value) details, would seem to imply much this

[21] See particularly his last book, "Psychology — a Study of Mental Life," Holt, 1921. The theory is also presented in less developed form in his earlier series of lectures, "Dynamic Psychology."

[22] As a matter of fact his actual method of identifying individual adjustments would seem to be in introspective terms, which may be very well in the case of human adults, but certainly fails in the case of the lower animals and infants.

same theory of instinct.[23] It is to be pointed out, however, that in these articles Professor Perry was not interested in the problem of instinct as such (i. e., the problem of innate connections) and hence his discussions imply a theory of instinct rather than state one.[24] The present theory has also been previously urged by the present writer,[25] although at that time its implications were not worked out in such detail.

Lastly, it is to be noted that in its essential features the theory is closely related to one of the most important aspects of McDougall's doctrine. What is it, in the last analysis, which gives the latter its overwhelming appeal? The significant points about it which do this, it seems to me are two; first, the positing of a specific type of central tendency or disposition (the emotion) which remains constant no matter what the varying circumstances of actual stimulus and actual response; and, second, the positing of a special type of abstract response originally given for and appropriate to each such central set or tendency (i. e., running away, in the case of fear; striking out, in the case of anger, etc.). But it is these two features which are the significant points about our theory. And our theory seems to me preferable, first, in that it gives a behavioristic rather than a merely mentalistic (i. e., the emotion) account of these central sets; and, second, in that it emphasizes more clearly the non-specific nature of the type of response; for example, not as running away, or walking away, or flying away, but merely as getting away, irrespective of the particular type of locomotion employed.

Finally, before concluding, it may not be amiss if, merely for purposes of rhetoric, we attempt to give the theory a little more concreteness by indicating a possible, though not necessarily correct, physiological substructure for it. I find the possibility of such a substructure in the very suggestive though no doubt still somewhat chaotic notion of Kempf's[26] of the autonomic and projicient appara-

[23] Perry, R. B., "Docility and Purposiveness," Psychol. Rev., 1918.
"A Behavioristic View of Purpose," Jour. of Philos., 18, 1921, pp. 85–105.
"The Independent Variability of Purpose and Belief," Jour. of Philos., 18, 1921, pp. 169–180.
"The Cognitive Interest and its Refinements," Jour. of Philos., 18, 1921, pp. 365–375.
"The Appeal to Reason," Philos. Rev., 30, 1921, pp. 131–169.

[24] His "Determining Tendency," in other words cannot be directly identified with what we are here calling driving adjustment. It would be something based upon this driving adjustment but would seem capable of involving acquired factors as well.

[25] E. C. Tolman, "Instinct and Purpose," Psychol. Rev., 1920, 27, pp. 230.

[26] Kempf, E. J., "The Autonomic Functions and the Personality," 1918, Nervous and Mental Diseases, Monograph Series, No. 28.

tuses. He supposes that the autonomic nervous system, together with the unstriped muscles and glands which it innervates, constitute a single independent and relatively autonomous mechanism. It is this autonomic apparatus which is to be conceived of as the prime mover of the organism — as that which controls and sets the goals for the projicient apparatus; i. e., the cerebro-spinal nervous system plus its terminal organs. When a stimulus external or internal excites the autonomic apparatus it causes some adjustment of viscera or of postural tension. This adjustment results in the arousal of a series of sensory impulses in the organs affected which flow into the cerebro-spinal system and there constitute what he calls an affective stream or "itch" (e. g., that of hunger or sex) which innervates this system, i. e., the projicient apparatus. This affective stream keeps the organism restless and moving until it eventually achieves a new stimulus which produces an opposing or neutralizing adjustment.[27] All we need to do is to explain our driving adjustments in terms of Kempf's adjustments of the autonomic apparatus and our 'random movements' in terms of his movements of the projicient apparatus and we will have the requisite substructure.

The fact that the random units of reaction on any given occasion fall within a certain relatively restricted limit of possibilities would be explained by supposing that the affective sensory stream resulting from the given autonomic adjustment, the given driving adjustment, is of such a nature as to excite innately only certain of the projicient activities. Thus, for example, when the infant is stimulated by having its limbs restrained, one sort of autonomic adjustment may be assumed to take place such that it goes through one set of random movements (the strugglings and cryings of anger). When stimulated by a loud sudden noise, another adjustment takes place and it goes through a second somewhat, though not entirely, different set of activities. Finally when stimulated by stroking or patting still a third adjustment takes place, and a third set of projicient activities; those of reaching out, smiling, cooing, etc.[28]

The feature of our theory which assumes that the same mechanism explains the *success* of a random act is provided for by supposing, as is assumed by Kempf, that success consists in any act which succeeds

[27] Part of the plausibility of Kempf's doctrine depends upon his thesis that the skeletal muscles contain unstriped as well as striped components, and that it is the unstriped components which control postural tension and that these are part of the autonomic system.

[28] Watson, J. B., Op. cit.

in providing a new stimulus which automatically and innately produces an opposing or neutralizing autonomic adjustment. Certain difficulties about the picture no doubt remain. It is not, for example, altogether clear just what would be the relative functions of the internal sensory stream coming from the driving adjustment, and of the sensory impulses coming from the external stimuli as such. When Thorndike's kitten,[29] for example, is shut up in the puzzle-box and goes through its random acts of scratching, clawing, biting, etc., these acts are certainly controlled and guided not merely by some internal sensory stream but also by the sensory stimuli coming from the outside; viz., the parts of the cage scratched at, clawed at, and bitten. What may be assumed to be the relative functions of these two sets of sensory stimuli? Let us consider the case of the absolutely unlearned organism. In the case of such an organism it is presumably the internal stimuli which alone function. Such an organism's acts are *really and truly* random. It will go through a whole set of random hittings, strikings-out, etc., quite independently of the true nature of the surrounding objects. And we may suppose that as a result of the contacts, i. e., as a result of the new stimuli which these contacts furnish, the organism will acquire attachments of its activities to these objects. This attachment to external stimuli is to be conceived as the first instance of that whole process the nature of which we are explaining. We assume, in short, that those random strikings-out which 'score hits'; that is,which come into successful contact with surrounding objects, are more pleasing to the organism in that they lead to stimuli producing a more successful re-establishment of autonomic equilibrium than is the case for the non-scoring strikings-out. Hence it is the former which tend to get learned — attached to the external stimuli in question. To return, now, to Thorndike's kitten: we must assume that at an early age; i. e., long before it was first confronted with the puzzle-box situation, its purely random acts had become developed and modified to the extent of becoming attached to definite external stimuli, so that when put in the box its desire for escape (i. e., its controlling autonomic adjustment) led for the most part to bitings, scratchings and clawings of the actual cage and not to mere mid-air activities.

The answer, then, to our original question as to the relative functions of the internal and external stimuli in the production of

[29] Thorndike, E. L., "Animal Intelligence," Macmillan, 1911, p. 38.

random acts would seem to be the following: Originally it is the internal autonomic-adjustment-produced stimuli which alone function. They produce *really* random acts; i. e., acts which have no dependence upon or necessary relevance to the external stimuli actually present. Soon, however, these really random acts tend to lose their pure character and to acquire specific attachments to external stimuli.[30] And whenever thereafter an autonomic adjustment gives rise to a series of random acts these acts are for the most part no longer purely random, but acts which are already modified; i. e., selected and attached to specific external stimuli. In this latter stage we may perhaps sum it up by saying that the internal stimuli release the acts and determine the type, but that the external stimuli provide the specifying control and regulation. For example, the internal stimuli would determine which of Watson's three sets of random responses[31] anger, fear, or love, should be released, but the external stimuli would guide and regulate the particular cryings, hittings, reachings-out, head-turnings, etc.

A second detail about the hypothesis which also remains to be discussed concerns, of course, the matter of the exact mechanism of learning. We have supposed that acts get learned; i. e., re-enforced and attached to external stimuli, in so far as they result in new stimuli which innately (or as a result of acquired connections) lead to an opposing neutralizing sort of autonomic adjustment. Now, obviously, this is a pretty large assumption and we must admit our present complete inability to give an adequate explanation for it. But we can at least show as much justification for it as for any of the other current assumptions, including Mr. Kuo's that learning depends upon the removal of the exciting stimulus itself. This whole matter of the underlying mechanism of the fixation of arcs in trial and error learning[32] is, of course, one of the dark chapters of psychology. On the one hand we have Watson and his followers emphasizing the mechanical efficiency of mere frequency and recency, and on the other we have Thorndike, while admitting the efficiency of recency and frequency in his "Law of Exercise," also emphasizing the importance of the resultant pleasure and pain (or of their concomitant physiological

[30] The most obvious case of this type of process would seem to be the acquiring of spatial adjustments; that is, the acquiring by the young organism of the ability to strike, claw, etc., at the actual space points from which visual stimuli excite it. The latter may develop perhaps in part *in utero*.

[31] Op. cit.

[32] Cf. Watson, J. B., "Behavior, An Introduction to Comparative Psychology," Chap. VII.

effects) in his "Law of Effect."[33] Now, it may be noted that the assumption we have made above could, if necessary, be brought under either head. The re-establishment of autonomic equilibrium could be declared to be the physiological basis for pleasure and the lack of such re-establishment the physiological basis for pain. Or, on the other hand, it could be declared that the reason that the act leading to the autonomic readjustment was learned was primarily because it had the advantage of frequency and recency, because, by hypothesis, it necessarily terminates any series of acts and, therefore, must always occur at least once in each trial, and must also be the most recent at the beginning of each new trial.[34] Our doctrine, therefore, would seem to have as good a chance as any other.

So much for a sketchy suggestion as to how Kempf's doctrine might perhaps be used as a physiological basis for this third type of alternative theory. But quite apart from the correctness or incorrectness of this or any other physiological picture, the behavior implications of the theory, its doctrines of driving adjustments and of random acts, do seem to us valid.

In conclusion, let us again draw attention to Mr. Kuo's own theory and to each of the three alternatives which, a priori, all seem to be possible views until further empirical observations shall have been made. But let us also confess our own faith that *instincts cannot be given up in psychology*, but rather that they must be retained, and retained under some such conception as that of the driving adjustment of this third alternative theory.

[33] Thorndike, E. L., "Animal Intelligence." A long list of further theories, but all more or less modifications of one or the other of the above two, could be made out. For an illuminating discussion of this whole matter see Kuo, Z. Y., "The Nature of Unsuccessful Acts and Their Order of Elimination in Animal Learning," Jour. of Comp. Psychol., Vol. II, 1922.

[34] In this connection cf. Watson, J. B., op. cit., p. 259 ff.

THE MEANING OF "INHERITED" AND "ACQUIRED" IN REFERENCE TO INSTINCT

BY WESLEY RAYMOND WELLS

LAKE FOREST COLLEGE

ON account of the present-day reaction among numerous psychologists against the instinct theory, a restatement of it is called for, which will embody the truths contained in the older views, and which will be also in accord with the best of modern biological and psychological investigations. I attempted such a restatement in a recent article in this journal (Vol. 16, pp. 334-43). A more detailed examination is needed, however, of one theme of that article, namely, the meaning of "inherited" and of "acquired" in reference to instinct.

In the above-mentioned article I quoted from a considerable number of psychologists who deny the existence of instincts. Professor Kantor's position may be taken as typical of that of several psychologists at the present time, the position, in brief, that: "Human instincts . . . in the adult individual are completely absent. . . . Mature persons possess no instincts" (*Psych. Rev.*, Vol. 27, pp. 52, 56). And the grounds, also, upon which Professor Kantor attempts to maintain this position are typical of those of many. These grounds are the observation that all reaction-patterns are acquired during individual development, and the claim that hence they should be called habits rather than instincts. Professor Kantor says, for example: "It is axiomatic that all of our reactions, no matter how basic or widespread, must have a history in the actual behavior life of the person. No capacity or potentiality can be anything but an acquired reaction system. . . . Under no circumstances can we admit that our reactions are the sheer unfolding of forces or processes within the person alone, uninfluenced by stimuli, which are presumed merely to set off reactions without conditioning their existence" (*ibid.*, Vol. 28, pp. 330, 354).

No better statement could be made of facts which, it would seem, should be obvious to all. I would agree wholly with the statement that all action-patterns are acquired during individual development, in the broad sense of the term "acquired." But I would maintain, at the same time, that some of these action-patterns are inherited,

since the notion of "inherited" properly includes the notion of "acquired." Those psychologists who deny instincts, defined as inherited action-patterns, for the reason that, as they correctly observe, all action-patterns are acquired during individual development, *have grasped but half the truth* — the truth, namely, that heredity includes the notion of constant environmental conditions influencing the development of somatic structures from germinal factors.

If one should define as inherited those bodily structures which develop of their own accord from determiners in the germ-plasm, without reference to environmental influences, then, of course, no action-patterns could be called inherited and there would be no instincts. But such a concept of "inherited" is an impossible one. According to it, nothing at all could be inherited, since nothing develops from germinal factors without environmental influences. It is unquestioned, especially in view of the work of Mendel, that heredity is a fact. Since heredity is a fact, and since no traits, even such as physical stature, color of eyes, etc., develop "of their own accord" from factors in the germ-plasm, then we must obviously include environmental influences in the notion of "inherited." As Dr. Sumner has well expressed it: "If we insist that heredity relates only to the 'intrinsic' factors in the situation — to the material constitution of the germ-plasm independent of environmental influence at any period — it seems to me that *we are dealing with something entirely imaginary*. There never is a period in the history of the germ-cells or their forerunners when they are not vitally dependent upon their living environment. Every step in their history involves an interaction between certain factors which may be called 'intrinsic' and other factors which are external to these. If we could detach all environmental elements from this complex there would be no organism left" (*Scientific Monthly*, Vol. 14, p. 231. Italics mine).

I

The acceptance of the position that there are inherited action-patterns, or instincts, which depend in part for their development upon environmental conditions, requires first of all an understanding of just what the view is. It requires an examination of biological data which have a direct bearing upon the problem.

Two sets of conditions operate in the production of an organism: first, germinal elements in the fertilized ovum; and second, external

factors which act upon the fertilized ovum and upon the organism as it gradually develops from the ovum. The external influences, comprising the chemical composition of the food supply, conditions of light, temperature, and moisture, and all the forces which operate as the stimuli for reactions of muscles and glands, are commonly grouped under the concept of environment. The term "heredity" is sometimes limited uncritically, especially in popular writing, to the elements of the fertilized ovum. According to this view of the meaning of heredity, the term would apply only to the determiners transmitted directly from generation to generation in the germ-plasm. A dichotomy between heredity, conceived in this manner, and environment is at the basis of much if not all of the present-day thinking and writing that attempts to discredit the instinct theory. If by "inherited" we meant "transmitted as such in the germ-plasm without environmental influence," then, of course, there could be no inherited action-patterns. There are, obviously, no action-patterns present in the ovum at the end of fertilization, at which point the transmission of germinal factors has already completely occurred. But neither are there present bodily structures of any sort. From this fact, of the absence of all somatic structures in the fertilized ovum, would one conclude that *nothing* is inherited? Obviously not. Since, however, inherited traits are not transmitted as such in the germ-plasm, we must broaden the concept of "inherited" to include the notion of the operation of those environmental factors which are normally present. Heredity, then, must include both intrinsic factors, namely, the determiners in the germ-plasm, and extrinsic factors, namely, constant, or normally present, environmental conditions.

The contrast between heredity, conceived in such terms, and environment ceases to be an accurate division. Similarly, the contrast between "inherited" and "acquired" ceases to be scientifically accurate, inasmuch as the correct notion of "inherited" includes "acquired under normal environmental conditions." Such contrasts are valid only if the terms "environment" and "acquired" are used in the limited sense which they should possess in Lamarckian-Weismannian discussions of the question of the inheritance of so-called acquired characters. By the term "environment," as used in such discussions, there should properly be denoted only *abnormal* extrinsic conditions which cause the organism to acquire *unusual* characters. For example, the tailless rats in Weismann's classic experiment were the result of abnormal, or unusual, environmental conditions, that is, they were the

result of the mutilating operations of the experimenter. It is not in this limited sense, however, that "acquired" is used by psychologists at the present time in discussions of instinct, but in the more general sense which would include normal as well as abnormal environmental conditions.

Not only in popular discussions and in the writings of psychologists, but also in the writings of biologists themselves there is sometimes confusion on these points. For example, in Conklin's book, *Heredity and Environment*, is found the following: "The development of an individual or the evolution of a race is dependent upon the interaction of two sets of factors or causes, the intrinsic and the extrinsic. The former are represented by the organization of the germinal protoplasm, the latter by all other conditions; *the former are known as heredity* or constitution, the latter as environment or education" (p. 309 of 2nd edition. Italics mine).

That the correct notion of "heredity" must include more than merely intrinsic, that is, germinal, factors may be shown concretely by reference to numerous experiments in embryology. For millions of years vertebrates have inherited paired eyes. That the development of paired eyes is not dependent solely upon intrinsic, or germinal, factors, however, has been demonstrated by Professor Stockard. Paired eyes develop only as a result of germinal factors plus normal environmental conditions. In 1907 Professor Stockard first experimented on the fish *Fundulus*. By increasing the amount of magnesium chloride in the sea-water in which the eggs were developing, organisms with single, median, cyclopean eyes were produced (see C. R. Stockard, "The Development of Artificially Produced Cyclopean Fish — 'The Magnesium Embryo,'" in the *Jour. of Exp. Zool.*, Vol. 6, pp. 285-337). The Showy Sedum (*Sedum spectabile*) when grown in a normal environment of white light produces by heredity an average of 1324 flower buds. When grown in an abnormal environment of red light it produces only 405 flower buds, and when grown in blue light it produces none at all (see Klebs' experiments, reported in Babcock and Clausen, *Genetics in Relation to Agriculture*, pp. 21, 22). Abnormal temperature conditions during the development of the diurnal peacock butterfly (*Vanessa io*) cause the fading out of the "peacock-eye" mark, which is inherited in a normal environment (see Goldschmidt's experiment, reported in Babcock and Clausen, *op. cit.*, pp. 22, 23). Beebe subjected pigeons (*Scardafella inca*) during growth to an abnormally moist atmosphere and produced

birds with a higher percentage of pigment in the feathers than is ever inherited in a normal environment (Babcock and Clausen, *op. cit.*, p. 25).[1]

Such experiments, typical of a large number which might be mentioned, show clearly that extrinsic, or environmental, factors play a part in the development in the individual of those traits which are properly called hereditary. *All* characters are acquired during the lifetime of the individual. Some of these characters we correctly call hereditary, however, namely, those which will inevitably appear in a normal environment. Other characters which develop only in an abnormal environment are not properly called hereditary. Such characters are the ones called "acquired" in Lamarckian-Weismannian controversies. Habits, as distinguished from instincts, are acquired in this limited sense of the term. The environment of civilized man, which is productive of numerous habits, or non-hereditary action-patterns, in each individual, is artificial and abnormal in many respects from the point of view of the biologically normal environment. It still contains, however, enough of the normal conditions of the primitive biological environment to make inevitable the inheritance of instincts.

II

When it is recognized that all somatic traits are acquired during individual growth, in the broad and generally accepted sense of the term "acquired," inasmuch as none are present in the fertilized ovum, and when it is recognized further that heredity is a fact, including not only intrinsic but also extrinsic factors (a normal environment), then the denial of instincts on the ground that action-patterns commonly called instincts are acquired loses its force. If *all* hereditary traits are acquired, that is, are dependent in part on environmental factors, then there is no *a priori* reason why certain action-patterns may not be hereditary even though dependent in part on environmental conditions. Moreover, there is satisfactory empirical evidence that some action-patterns *are* hereditary. Professor Kantor says correctly, as quoted above, "Under no circumstances can we admit that our reactions are the sheer unfolding of forces or processes within the person

[1] See also: H. J. Bagg, "Disturbances in Mammalian Development Produced by Radium Emanation," in *Amer. J. of Anatomy*, Vol. 30, pp. 133-54; F. M. Alsop, "The Effect of Abnormal Temperatures upon the Developing Nervous System in the Chick Embryos," in *Anat. Rec.*, Vol. 15; E. S. Goodrich, "Some Problems in Evolution," *Science*, Vol. 54, pp. 529-38.

alone, uninfluenced by stimuli [that is, by environmental forces]." Such an observation, however, is no refutation of the instinct theory, as is claimed by Professor Kantor and by others, for example, by Kuo, Ayres, Bernard, and Allport (see citations and references given in my article in this journal, Vol. 16, pp. 334-43). It is merely a recognition that instincts are not transmitted as such in the germ-plasm any more than other hereditary somatic characters are transmitted as such in the germ-plasm. Hereditary action-patterns must obviously be subject to the same conditions that govern the development of all other hereditary structures.

The removal of the objection that there are no instincts inasmuch as environmental influences are an essential condition for the development of all action-patterns is, of course, no positive proof that there *are* instincts. Such proof must rest, first, upon a study of the universal elements constituting a normal environment so far as the acquisition of action-patterns is concerned, and second, upon an observation of the fact of the universality of certain types of action-patterns among all races of man, savage and civilized, and among the higher non-human animals. Evidence for the second point, regarding the universality of the basic types of action-patterns, was presented in my article on "The Value for Social Psychology of the Concept of Instinct," especially in the citations from Darwin's *The Expression of the Emotions in Man and Animals*. More detailed evidence is contained in such works as McDougall's *Introduction to Social Psychology* and James's *Principles of Psychology*, in the chapter on "Instinct." Evidence for the first point, of the fact of conditions universally present in the environment both of savage and of civilized man, was also given in the article referred to. Further evidence on this point is to be found in the studies by James, McDougall, and numerous others. It was pointed out in the above-mentioned article that the environmental conditions universally present in any normal environment, savage or civilized, are of two sorts: first, internal stimuli (which are environmental factors, being external to the germinal factors and to parts of the organism, even though internal so far as the organism as a whole is concerned); and second, such external factors as edible objects (the external stimulus of the food instinct), members of the opposite sex (the stimulus of the sex instinct), the presence in groups of other members of the same species (the stimulus of the gregarious instinct), the presence of inferiors and of situations in which the individual is in some respect superior to the group (the stimulus of

the instinct of self-assertion), situations interfering with activities and impulses (the stimulus of the instinct of pugnacity-anger), and so on for the parental instinct, and the instincts of self-abasement, curiosity, fear, and the like. Even though modern man, living under conditions of civilization, does not encounter sabre-tooth tigers and all the other specific objects which existed in the environment of his earlier ancestors, still the normal environment at the present time contains the same universal elements, embodied in new sets of particular objects, which, when embodied in the particular objects of the primitive environment, constituted the stimuli of the instincts of primitive man. Instincts are reactions to the universal elements (in their physical and chemical aspects) of specific objects and situations, and not to particular objects as such. For example, the fish which reacts positively to the worm on the fisherman's hook reacts to the particular worm in question only in so far as the worm is an exemplification of the universal which constitutes worms and certain other objects members of the class of edible objects. The specification or specialization of instinct (see James, *Psychology*, Vol. 2, pp. 394ff), by which one object of a group comes to be the only adequate stimulus of the instinct, is a matter of habit-formation and is not inherited.

III

It is of importance that psychologists should keep clearly in mind, in their discussions of instinct, the correct meaning of heredity. When even biologists themselves are sometimes confused and confusing in their treatment of the subject, as was noted above, it is not surprising that some psychologists should fail to see that "hereditary" is not synonymous with "intrinsic," or "germinal," but includes normal environmental conditions. Practically all, if not all, of the psychologists who at the present time deny instincts *do* fail to consider this point or else they could not think and say that they have refuted the instinct theory by showing that no action-patterns mature "of their own accord," uninfluenced by the environment. It would be possible, however, for psychologists to recognize this fact, that heredity includes normal environmental conditions, and that all hereditary structures are acquired, in the broad sense of the term, without thereby ceasing to be properly called hereditary, and, at the same time, to contend that there is no connection between such cases as were cited above, *e. g.*, the one-eyed fish illustration, and the problem of instinct. Such

a contention, nevertheless, can be shown to be groundless. In the first place, it should be noted specifically that instincts in their hereditary aspect are purely structural, that is, they are patterns of differential resistance in the synapses of the nervous system. If for any reason one should wish to denote by the term "instinct" behavior itself, then one would say that instinct is the function of inherited structure. The fact would remain that the development of the inherited structure would be subject to the same laws that govern the development of all other inherited structures. That is, normal environmental conditions would play a part in the production of the nervous structures involved in instincts, just as much as in the development of the paired eyes of the fish *Fundulus*. The problem of the acquisition in individual development of hereditary action-patterns is a problem of embryology and morphology.

It should be noted, in the second place, that the concept of the external environment which plays a part in the development of organisms includes not merely nutritional elements, and conditions of temperature, light, and moisture, but also all stimuli for reactions of muscles and glands. And conditions of use, or exercise, of already developed structures become a part of the normal (internal) environment, exerting an influence in the later development of other structures. This aspect of the normal environment is important in the acquisition of hereditary action-patterns. For example, many simple reflexes must have become integrated before the more complex response of locomotion is possible, but it would be only in an abnormal environment that the prerequisite integration of the simpler reflexes would fail to occur. A child that grew up without a surface, such as the floor or ground, upon which first to lie and sit would never creep, stand, and walk, but such an environment would not be normal, or even possible.

In the third place, emphasis should be laid upon the fact that responses of inherited action-patterns involving principally the autonomic nervous system and the unstriped muscles, that is, the emotions in their physical aspect, constitute important internal environmental conditions normally present and operative in the development of instincts, which are action-patterns involving principally the cerebro-spinal nervous system and the skeletal muscles.

Much confusion would be avoided in discussions of concrete problems of instinct and of habit if correct concepts of "inherited" and "acquired" were employed. Both habits and instincts are

acquired in individual development. Habits are not inherited since they are acquired as a result of environmental conditions which are not constant or normal in the biological sense, and since, in the second place, they are due wholly to environmental influences, and not directly at all to germinal factors. Instincts, on the other hand, are inherited, being dependent both on germinal factors and on normal environmental conditions. If, to conform to frequent, though inaccurate, usage of the terms "inherited" and "acquired," one should wish to speak of instincts as inherited and habits as acquired, one should specify that the term "acquired" is being used in the special and limited sense in which it may apply to habit only, and not to instinct, the sense, namely, in which it has been employed in Lamarckian-Weismannian discussions, as indicated above; and one should specify that the term "inherited" is being used in the sense which is inclusive of normal environmental influences. But it is not in these senses that the terms are being used by writers on habit and instinct.

AUTOMATIC WRITING AS AN INDICATOR OF THE FUNDAMENTAL FACTORS UNDERLYING THE PERSONALITY

BY ANITA M. MÜHL

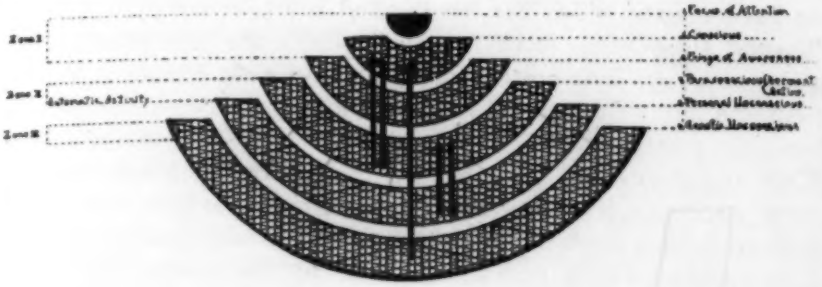
ST. ELIZABETH'S HOSPITAL, WASHINGTON, D. C.

PART I

THE cases of automatic writing which will be described in the following pages were observed in women who to all outward appearances and to superficial examination are perfectly normal. They have adjusted well not only to their environment but also to all periods of stress and strain which they have encountered. The casual observer would with difficulty be convinced that these charming, intelligent and efficient women are potentially psychotic. However, I hope to be able to show that automatic writing is not only an indicator of an unstable mental background, but also of some of the fundamental factors which help to make up the personality.

In order to do this it may be well before presenting the cases to discuss briefly the levels of Consciousness, or as I prefer to think of them, plateaus in the range of consciousness. Many terms have been used to describe these various states and there has been some confusion owing to the numerous definitions and designations given by different writers. Prince who has given us such clear cut definitions has unfortunately limited his field so as to exclude some of the newer theories of the psychoanalytical school which can not be ignored entirely. Therefore I shall attempt to incorporate some of these newer ideas with the older ones and offer a set of definitions which will assure the reader of the meaning which the various terms I shall employ have for me.

(1) The Focus of Attention is the spot light of Consciousness. (2) Consciousness is our reaction toward the composite picture of our mental processes at any given moment of which we are aware. (3) The Fringe of Awareness is the borderland which slopes into the Paraconscious and consists of the most immediately associated ideas which accompany and modify the conscious state and which may slip into clear consciousness with the least possible resistance. (4) The Paraconscious is that state in which ideas and images are beyond the field of awareness but which are not too difficultly recallable. If the ideas and images of the Paraconscious are dormant then we have a



Zone I

1. Focus of Attention
2. Conscious
3. Fringe of Awareness

Zone II Automatic Activity

4. Paraconscious { Dormant / Active

Zone III

5. Personal Unconscious
6. Genetic Unconscious

SCHEMATIC REPRESENTATION OF THE MENTAL STATES

1. The states are arranged in the degree of intensity they possess in relation to the conscious state.
2. Each state beyond the conscious state has a greater radius, increased range and diminished intensity.
3. Zone II is the seat of automatic activity.
4. Zones I and II may act on each other reciprocally — there is a two-way traffic.
5. Zone III influences the zones of greater intensity, but is not influenced by them — there is a one-way traffic only.

state which was formerly described as the foreconscious and the subconscious; if the ideas and images are active and independent then we have a state which has been called the Co-conscious. (5) The *Personal Unconscious* is that state in which the records of the experiences of our lives are retained and conserved, no matter in what condition they were impressed; whether in normal consciousness, in the hypnotic state, in dissociated personality, or in hysterical crises. These complexes not only are not readily accessible and recallable but in part are actively excluded from consciousness by the resistances built up to keep them from reaching the field of awareness. However I cannot agree wholly with Freud's idea that the unconscious' mental processes are of such a character that they are wholly incompatible with the civilized conscious personality, because I feel there is a great deal in the unconscious that is in fact quite compatible. The unconscious may be the mental dumping ground, but not all that finds its way to the dump is refuse by any means. Ideas and experiences may get lost in the unconscious not only because they are forced into it and kept there by the direct utilization of energy, but also because once having reached there they may lose the necessary intensity which would enable them to reach the Conscious state; in other words they become inert. Put very simply the personal unconscious is the individual's mental lumber-room. (6) The Genetic unconscious constitutes the haziest part of the background, and is that state in which the instincts of the development are impressed. These instincts while influencing the individual's reaction are beyond any form of recall. It is thus seen that although the conscious, paraconscious and personal unconscious are capable of affecting each other reciprocally, the genetic unconscious while exerting an influence on the preceding states, can never be influenced by them because it represents the residual left in the wake of a development for which our present powers of interpretation are wholly inadequate.

It is in the Unconscious, then, that we must look for the fundamental traits which help to make up and modify the personality. Long says there are three aspects of the basis of character: (1) The unknown motives of the Unconscious; (2) The presence of psychic energy designated libido, and (3) the bisexual predisposition of every person. So much has been written on the subject of bisexuality of the individual by various investigators, that little need be repeated here. Of course it is known that all human beings are undifferentiated as to sex for some five weeks of prenatal life and as far as we know now, may

become either male or female. At birth the child, whose sex organs are fully formed, is still psychologically undifferentiated and in maturity each sex does, under certain conditions show characteristics, which are supposed to belong to the other sex; in other words, there is present a mixture of the two tendencies. The most brilliant experimental work that has been done on the sex problem, is that of Goldschmidts which unfortunately has been too briefly reported in print. Of course the work was done with Lepidopteræ, but even so why may we not use these illustrations as valuable? He asks the question, are the two sexes clean cut, or are they nothing but limiting points of a series which might approach each other or even become interchanged, and then demonstrates that all types of intersexuals can be produced experimentally, many of them with predominating external signs of a given sex and even the instincts of that sex, but unable to reproduce and create, owing to the mixture of sex elements present in the sex gland. Freud says that the libido is of a masculine nature whether in the man or woman, and that normally there is present in every one a certain amount of anatomical and psychic hermaphroditism. Stekel tells us that all dreams and all sexual symbolisms are bisexual. Freud goes further and says that in no normal person does the normal sexual aim lack some designable perverse element and that the polymorphous perverse disposition exists in the universal human. Add now to this Stekel's assurance that we are all "Universal Kriminell" and that the criminal instinct is deeply rooted and slumbering in all mankind, and we see that with all this array of rascality lurking in our dim, vague, mental background we are all potentially *unsafe* and *unsane!*

It is easily understood that disorders in any one or several of the mental states may give rise to various pathological manifestations, but it is to an abnormality of the paraconscious with ramifications into the unconscious, resulting in a disintegration of the personality, that I wish to direct special attention. The things that happen to us are built up into systems of associated thoughts and any one occurrence may be related to many other systems, through associations, which will give an entirely different coloring to the original experience. These systems in turn are related to subsystems, each with a possibility of multiple associations and practically every idea is associated with a complicated and systematized organization of previous experiences. When we consider further that the ideas and images in the paraconscious may be reproduced intact as experienced, or that they may appear, after having combined with other systems and subsystems, as

something utterly foreign, or that they may be completely and effectively placed beyond recognition through elaboration and symbolization, it is not remarkable that, if the paraconscious goes on a rampage, some curious phenomena may be observed.

In a normal mentally healthy person there is such a firm synthesis of the mental states that a certain stability of personality results. If for any reason this synthesis is weakened, there occurs a disintegration of the personality which, varying in intensity, finds expression in conditions ranging from simple forgetting, through neurasthenia, hysteria, to complete dissociation and multiple personality either of the alternating, or secondary type. Repression of unbearable or unwelcome ideas which may not be altogether successful at first, may later become so well fixed that the normal mental synthesis may be broken up into independently functioning parts or systems. The formation of secondary personalities involves two factors, namely dissociation and synthesis or resociation, and as a vast combination of resociations of the many systems and subsystems can take place, it is easy to see that theoretically, at least, any number of secondary personalities may arise which are characterized by some form of automatic activity. This weakened synthesis of mental states and automatism constitute a reversible reaction, for if the power to synthesize becomes lessened, the remaining repressed elements of past experiences are apt to take up automatic individuality, while the development of the automatism tends to produce further dissociation. Somnambulism, crystal gazing, the ouija board and automatic writing are all manifestation of dissociated ideas.

Automatic writing in its simplest form is script which the writer produces involuntarily and in some instances without being aware that he is doing it, even though he be in an alert waking state. Automatic writers may be divided into two classes: those who can write only while being consciously distracted and stimulated, and those who can write only while relaxed and with the attention fixed. These two groups may be further subdivided into subjects who at the moment of writing have no idea what the hand is recording and those who at the moment have ideas corresponding to the ones recorded, but which seem to flood the mind without volition and without logical association toward the normal mental processes. The writing is the manifestation of dissociated ideas of which the writer is not aware. Very frequently the subject has no idea what causes him to do the writing and he may be accredited with mediumistic possession, and supernatural

powers so that he may even begin to believe that he has "psychic tendencies."

However the material produced by the person doing automatic writing is entirely endogenous. The subject matter presented generally comes from the paraconscious, though the fundamental traits found in the unconscious often exhibit themselves in some of the productions, masquerading as individual personalities. Some of these personalities — those of the secondary type — are concomitant with the original or primary personality and are fully aware of all that the waking or normal personality does, feels, and thinks, and so they have an enormous advantage over the poor normal who has not the faintest idea what any given secondary personality may be up to. These secondary personalities may make records which appear to be exact reproductions of the handwriting of persons who have died and it is this type of individual who is often unsuspectingly exploited by the professional and unscrupulous so-called "psychic."

These cases of apparently authentic communication in the handwriting of deceased individuals have been the inciting factor of numerous psychical research experiments. It is interesting to note in this connection that W. A. Melcher in his discussion on "Dual Personality in Handwriting" says that attempted voluntary changes in handwriting as for purposes of disguise would not produce any marked effects especially in those details which were not known to the writer, but in the case of dual or multiple personality it is different, for here the writing lacks the features of voluntary disguise and it is necessary to go beyond physical and pictorial details and search the writing for the involuntary and uncontrollable discriminating marks shown by the writer. The disinterested handwriting expert using all scientific methods available can determine correctly whether or not the writings are the records of two different individuals or the same one. In this way there is provided a physical means of proving that the writing is not that belonging to another person who supposedly has taken possession of the writer.

The surprising and unexpected variety of material produced by the subject is simply amazing. Latent talents of which the writer is in complete ignorance of possessing may be demonstrated, such as, writing poetry or stories; composing music; illustrating and designing. The writer may record lurid, criminal stories well worked out in detail though in the normal personality all traits of criminality and cruelty appear entirely lacking, thus suggesting the "Universal Kriminell"

trend. Another writer may reveal personalities claiming to be delinquents and prostitutes, thus showing polymorphous perverse sexual instincts which would quite horrify the normal personality. The writer may fluently express ideas in a foreign language which he has forgotten he has ever heard. The subject may display a sudden facility for using the opposite hand or of using both together and may even produce two personalities simultaneously each making use of a different hand and each representing a different sex, thus showing a distinct bi-sexual trend.

The set of experiments reported by Downey and Anderson in 1915 showed conclusively that a person could read, write or calculate consciously and could produce records at the same time automatically from the paraconscious, thus showing that two streams of thought could take place at the same time. Prince through a reverse process demonstrated by means of a clever set of experiments that the active paraconscious could function simultaneously with the conscious and could even perceive and do elaborate computations correctly, totally independent of the conscious. The chief thing to bear in mind is the fact that not all the material produced automatically is necessarily symbolical and that much of it is merely an autographic record of ideas, images or experiences absolutely intact. The variety of material is almost limitless, but in the two cases I am discussing, both show distinctly a bisexual trend, while one beautifully illustrates the polymorphous perverse sexual, and the other the "Universal Kriminell."

PART II

The two subjects to be discussed both have the same first name and their life histories are quite similar though they do not even know of each other's existence. For the first of the two cases, I am very greatly indebted to Dr. Winifred Richmond who is a personal friend of the subject and who turned over to me her records and such information about the writer as was available. This case was reported by Dr. Richmond at one of Dr. G. Stanley Hall's seminars at Clark University in 1919 but was never published. The second case is that of a personal friend of my own and for this reason I am somewhat handicapped in presenting both history and a statement of the records as I have promised to withhold certain material.

1. Violet X—

Little can be told of the family history except that the parents

were Scotch and that the father died at the age of sixty. The mother is a "chronic worrier." There are two younger sisters who are healthy and are not dominated by intellectual interests as is their sister.

Violet X— was born in New England and lived a normal healthy life as a child. She had excellent schooling, graduating from Wellesley. She had no illnesses and never considered herself nervous or hysterical. In college she had the usual courses in psychology but knew practically nothing about abnormal psychology. She had been specially interested in sociology and had done some social service work in Boston. She was a teacher of English and later married a professor of English in a middle-western town. She had a fine intellect and a charming personality.

Just previous to the time of her automatic activity she had worked very hard and had begun to feel run down. The physician she consulted told her she was overtired and had some slight cardiac disturbance. Aside from this condition of fatigue she appeared to be normal physically and mentally. One day when in this state of fatigue, it was discovered that the Ouija Board was working unusually well for Violet X— and Dr. Richmond was prompted to test her ability to write automatically. This started a series of records which were obtained during a period of several months. The first attempts were not so brilliantly successful, but with repeated attempts a marvelous facility for writing developed and with this an increased tendency to dissociate appeared which finally became so alarming that the experiments were abruptly terminated.

During the period of experimentation no less than seven distinct recurring personalities emerged, together with several minor ones. Each had a name and a handwriting more or less individual. Each spoke of herself or himself in the first person giving detailed answers to questions, coherent accounts of themselves and admonitions and advice to the experimenters. Half a dozen different personalities might come at one sitting, interrupting one another unceremoniously, and sometimes even rudely. The personalities, once established, would often appear when called, coming with the remark: "So and so is here, what do you want?" Miss Violet X— maintained the same attitude as the other experimenters questioning or replying to what the hand was writing. Any levity on the part of the subject or the others was apt to call forth scathing remarks from the secondary personalities. Miss X— with one exception retained her own personality and was fully aware of what was going on, although she by no

means always knew what the hand was writing; but as will be seen, her behavior was different when the different personalities were asserting themselves. In the following account it must be remembered that they appeared at different times throughout the several months of the experiment and that often several came at one sitting; but they shall be taken up, one at a time.

The first of these personalities to appear and the one who appeared most frequently and had the most to say was Annie McGinnis. Annie immediately drew a portrait of herself and it was a very clever picture. (In her normal personality Miss X— could not draw at all). Annie's story as she told it at various intervals is the following. Annie was a poor girl who had fallen through no fault of her own, but had been led astray by a man who had promised her food and shelter and an easier life. After that she became a prostitute and finally died in giving birth to a child; she suffered greatly because of her sins and wandered aimlessly about until she found Miss X— with whom she took up her abode "because," as she said, " you are so good, I love to be with you." Annie true to type was coarse, rude, quick-tempered, resentful, reckless and passionate. Whenever she appeared she took charge in a whirlwind fashion and if she happened to be in a good humor, she was a great blarney. Whenever Annie appeared, Miss X— would be seized almost as though with a convulsion; her arm would stiffen and the fingers would grip the pencil tightly and write in a coarse, flowing hand; or her feet would pound on the floor while the arm would bang itself on the table with enough force to cause considerable pain. The pounding occurred, Annie said, when she thought of what men had done to her. Annie hated men with large capital letters and often after one of the male personalities had been recording she would obliterate all traces of these records by scribbling over the entire paper.

During Annie's appearance, Miss X— often was observed to have a peculiar expression on her face which grew more marked toward the latter part of the experiment. Her eyebrows were raised and she looked almost frightened. Sometimes she would grit her teeth and press her lips together firmly.

Mary Patterson was the next personality. Her handwriting was very much like Miss X—'s normal writing. She used the best English and in general was more like Miss X—'s primary personality than any of the others. She came quite seldom and when she did she was apt

to be rather rudely ousted by some of the more aggressive ones. Mary declared she was Miss X—'s most familiar spirit.

Mary Minott was a third personality. She described herself as a Cosmopolitan and very talented. She hated Mary Patterson and called her a prig, full of puritanical notions. She would bitterly upbraid Miss X— for preferring Mary Patterson to her. She insisted that if Miss X— would only listen to her she would make her a famous designer, and to prove it she designed a number of beautiful dresses (Miss X— normally could not do this at all). Mary Minott had a perfect passion for designing gowns and she had talent that amounted almost to genius.

A fourth personality, persistent and always unwelcome to Miss X— was Alton. Unlike the others, he was no myth but a friend of her fiance, whom she had met the previous summer. He wrote the most sentimental things and seemed to try to dissuade her from marrying the man to whom she was engaged. Alton was always urging Miss X— to give herself up to mediumship saying that the spirits of both the dead and the living could speak through her. He admitted that it was sometimes dangerous but felt he could guard her from harm.

Miss X—'s father was the other personality who purported to be dead, as he actually was. This personality assumed the actual handwriting of her father. He did not appear often and then only made hurried remarks about family affairs.

A sixth interesting personality labeled himself simply "the Spirit of War and Desolation." This spirit sounded dreadful warnings (it was just prior to America's entry into the war) and urged Miss X— to work for the Red Cross. This personality alternately urged Miss X— to give up automatic writing and to take up the study of mediumship for which she was told she had rare talent.

The last personality to develop and the one who finally caused the disruption of the experiment, called himself merely "Man." In the beginning he was not at all distinct, neither with regard to handwriting nor to the content of what he wrote. At first he would break into some other conversation with totally irrelevant remarks and when questioned would give only ambiguous answers or none at all. Finally however he identified himself as man and would alternate with Alton, but he developed such an antipathy toward Alton that he succeeded in banishing him altogether. He also fostered an intense dislike for Annie McGinnis who hated him in return in letters two

inches high. She considered him the incarnation of all her enemies. "Man" tried to banish her, but nothing could banish the flippant and irrepressible Annie and she took particular delight in scribbling all over the things he had written.

These two personalities now had the field pretty much to themselves and "Man" became more and more persistent and dominating. A change began to come over Miss X— when he was in control. She first mentioned it herself, saying: "I feel different when 'Man' is present than I do with any of the others; there is a feeling of power and vigor and I don't want to sit still, I want to run or express myself in some vigorous physical way." "Man" soon expressed an interest in dancing and would fill sheet after sheet with marks produced through rhythmic motion of the pencil, becoming more and more energetic as time went on. He would write occasionally — "Let's dance, Violet." Miss X— began to say she believed she really could dance spontaneously if she would give herself up entirely to the feelings, but she was always a little afraid to try.

Toward the end of the experiment some three months after it was begun, Miss X— was writing quietly one evening when "Man" came and as usual began to dance. In a moment Miss X— spoke loudly and said — "Oh — I want to dance — I believe I can dance" and getting to her feet she began to sway rhythmically back and forth. The swaying became more and more violent, her arms began to wave and her feet to execute a curious shuffling movement. Suddenly her body gave a violent wrench and she cried out in a sharp, high voice. Her face depicted the emotions of a tremendous struggle, ecstacy and terror contending for expression. She was taken to a couch by the experimenters, where for about ten minutes she remained stiff and moaned in an unnatural voice. Gradually she resumed her natural speaking voice, relaxed and returned to normal and though rather terrified by the experience, she was able to discuss what her feelings were. She said she tried to control the movements and suddenly realized she couldn't — it was as if something were making her do it and she couldn't stop. She declared she was in fear of losing herself and of another personality gaining control. She said: "I wanted to give myself up to it and yet I didn't want to. I can't describe it, but I felt as though I were two people."

After this experience, Miss X— was strongly dissuaded from trying anything more, but she did try it a few times and always "Man" came, telling her he represented all the vigor and love of action in her. He

always wanted to dance. After this came her marriage and the automatic writing was largely forgotten for several months, but one day when she was alone she decided she would try it again. This time Mary Patterson, "the most familiar spirit" came and explained that all the other personalities were completely submerged and lacked sufficient intensity to be able to express themselves. After this no further attempts were made.

Miss Violet X— was tremendously interested in all the manifestations and introspected carefully and sincerely. She felt that none of them expressed things outside her own experience except Alton, who was a real person. However after repeated attempts at analysis, Miss X— recalled a conversation with her mother after her meeting with Alton which satisfactorily accounted for the genesis of his remarks, and after this explanation he gradually disappeared.

Miss X— felt that Annie McGinnis was entirely explicable. She had been strongly impressed in her experience in social work with the idea that only the accident of birth and training had saved her from such a life as that led by some of the girls of the lower economic classes. Annie was, in part, the systematized expression of ideas, once acutely conscious but largely relegated to the paraconscious where they continued active, and she was also the means of expressing the polymorphous perverse sexual tendencies of the personal unconscious. She further illustrated a distinctly compensatory trend for her expressions of hatred for men were probably the outcome of the ambivalent opposite emotional tendency.

"Man" undoubtedly represented the bisexual trend of the subject and came, if not wholly, at least to a great extent from the personal unconscious. His desire to dominate, as well as the assertive and very aggressive tendencies manifested, appear much more instinctively masculine in character than feminine. The power and vigor of expression as well as the greater freedom from repression in this personality seem to be evidence of the same phenomenon.

Case II — Violet Z.

The family history in this case is of considerable interest. The father's maternal grandmother who lived to be past a hundred had the ability to do automatic writing. The father himself of Scotch and Dutch ancestry has always been a very unpractical business man and though once in good financial circumstances, met with many reverses. His particular interest has been tracing the origin of religions and he has written a book on the subject. He has been so

engrossed in his researches that he has paid too little attention to his children. The mother was of Welsh and English descent and was a lovable, sweet, dignified woman whom every one admired. She met her husband at college and they were married during their Senior year. She could do automatic writing and was thought to have the power to be a Spiritualist Medium. She however did not believe this, and told her husband, — who was then interested in spiritualism — that after she was "in spirit land" she would not communicate with him. She died when Violet Z— was eight years old. Mr. Z— feels that he has talked with his father and many dead friends, but *never* with his wife. Violet Z— has an older sister and brother, both very bright. The brother has always been erratic — has been an actor and a newspaper man. The sister did very well in school and was bright in college. She was witty, attractive and delightful. Up to her sophomore year Violet's sister was cook, housekeeper, mother, and chaperone all in one, as they had no maid. Toward the end of her second college year she began to suffer with thyroiditis and had to go to a hospital for many months, and the rôles of the sisters became reversed.

Violet Z— herself is now about 26 years old. She was a seven months baby. As stated above her mother died when she was eight and she remembers her mother as a very pretty lady who lived with them — not so much as a mother, although she was deeply attached to her. Violet Z—'s childhood was normal and she had good health. She dearly loved to play with dolls, but on the other hand she was a bit of a tom-boy too, for she enjoyed romping and playing out of doors and was frequently up to some sort of mischievous pranks. She started going to school at the age of six. In spite of her liveliness at home and among her intimate playmates, among strangers, she was quite shy and timid and made few friends. As a child Joan of Arc and Florence Nightingale were the two characters who most appealed to her. She was never so brilliant in high school as her sister and her shyness increased.

When she started to college she was absolutely ignorant of all sex matters, as she had received no instruction. The following summer, after having studied Biology for a term and still not understanding the reproductive functions, she had these phenomena explained to her while visiting a friend in the country. Her whole college course was shadowed by worrying about her sister who became ill. She had a great many additional responsibilities added to her usual ones and she began to lose her remarkable endurance. Whereas she had always been

even tempered, happy and sunny in disposition, she now began to show slight signs of irritability and of being inclined to worry.

It was during her sophomore year that she met the man she eventually married. After her marriage her husband was unable to keep a position for more than a short time, and she had to help with their support by teaching. She had a miscarriage and was very ill. At present her husband is doing splendidly and they have bought a new home. A baby was born about six months ago and Violet Z— got along fairly well afterwards, though the child had to be taken with instruments.

She first began to do automatic writing her freshman year in college and started it simply because she knew her mother had written and thought she would try. She was delighted to discover she could do it and soon was entertaining her more intimate friends with her performances. She always preferred having the room quiet and always maintained a rather listless attitude toward the whole procedure. Her automatic activity differed from that of Violet X— in that it never produced a recurring personality and also in that it did not cease after her marriage, for the most remarkable record she accomplished was made just a few months ago.

The first of the stories and one that was written all in one evening concerned the phenomena attending the death of a person calling himself William Young. The working out of the plot covered sheets and sheets of foolscap paper and the tale was profusely and cleverly illustrated. (Violet Z— like Violet X— could not draw *at all* voluntarily). William Young was born in England over a hundred years ago (he was forty-five when he died and he said he had been dead over fifty-five years.) He lived in a small coast town which he said was called X— and he drew a map on which he located the place. This was verified in an atlas and it was further found that the map was very accurate. None of the group present has any conscious knowledge of ever having heard the name of the town before. William gave as his occupation, that of butler in a wealthy family. He drew a magnificent picture of himself in his livery. His brother, several years younger and not so successful as himself, was a carpenter by trade. Both he and his brother were in love with an attractive young woman who was a maid in the same residence where William was butler. She preferred William and they became engaged one early summer. This angered the brother and made him very resentful toward William but he attempted to mask his feelings and he made a

picnic in honor of the engaged couple, inviting the members of the family and some intimate friends.

At this stage of the story several sheets of foolscap paper were covered with illustrations depicting the picnic grounds in a shady nook near a spring. The ground was covered with wild flowers. Great care was given to drawing the details of the lunch; the cloth spread on the ground, the cutlery, the baskets of food and ale were all portrayed, while special attention was directed to the seating arrangements and the places where he, his brother and the girl sat were carefully marked. The party proceeded hilariously for a time, but presently as William ate an onion his brother passed him, he suddenly appeared to strangle, and died most unexpectedly.

The merrymakers were utterly stunned over the tragedy and the young woman was quite wild with grief. Great perplexity prevailed when it was attempted to fix the cause of death, for William had always been strong and robust and was supposed to be in the best of health; but finally it was decided he must have had a weak heart of which no one had been aware and that he had really died of heart trouble.

At this point of the story, the writing became agitated and the words simply poured themselves on to the paper. William assured us that instead of dying from any normal cause, he had been foully murdered by his brother who was so intensely jealous of him that he decided to put him out of the way. He wrote over and over — "it was just one drop that he put in the onion that did it" — but what the drop of poison was William did not know.

His betrothed after a suitable period of grieving, married the wicked brother who contrary to all the laws of fairy tales, prospered and lived with his bride, happily ever after. William showed considerable emotional distress over the fact that the murder had never been discovered and that his criminal brother had never been brought to justice.

We tried by various methods to discover if Violet Z— had ever read or heard of such a tale, but she was unable by any means attempted to recall anything even faintly resembling it. However undoubtedly she had heard or more likely read of it; for the geographic details were so accurate that they could not have been fabrications.

The second story written on another occasion claimed to come from a Charles You. The beginning of this story was quite amusing, for as the hand commenced writing, some one asked, "Who is writing?" and the hand replied "*You*." This naturally caused considerable

mirth and about ten times in reply to the same question, the hand wrote, each time in larger script, more emphatically and apparently quite peevishly, "*You.*" Finally some one said: "Well, what is your other name?" and the reply this time was, "Charles You."

Charles You was a scientist in the employ of the German Government who had been sent to China to make an important geological survey in the interior. He was accompanied by an assistant and all went well for a while until one day they had a quarrel which ended in a bitter fight. The assistant who had about the same amount of strength, triumphed and left his adversary in a state of unconsciousness, taking with him important data which had been collected. You, however, had been injured during the fight, in his foot and was unable to move for some time after regaining consciousness. Owing to lack of proper medical attention an infection started in the foot which finally developed into a general septicæmia and which was the cause of his death.

The only illustration in this story was so remarkable that I feel inclined to describe it in detail. In discussing the foot injury and subsequent infection a most accurate picture was drawn of the bones of the human foot and leg — not a tarsal nor a metatarsal was omitted and they were placed in perfect juxtaposition. I happened to be studying anatomy at that time and consequently I was much impressed by the perfect correctness of the production. Violet Z— had studied zoology but the only occasion she had of seeing the bones of the foot was in the skeleton which adorned the biology laboratory and she never consciously paid any attention to it. The accurate image was impressed in the paraconscious however where it was stored for further use, even though the perception in its passage through had evoked no response in the conscious state. When Violet Z— was asked to make a *conscious* effort to draw what she had automatically done so perfectly, she was utterly unable to draw anything that in any way resembled that part of the skeletal anatomy.

The third story concerned an unnamed prisoner who had escaped from the penitentiary where he was serving a long sentence for having assaulted a man and who had traveled to the far north. He drew numerous maps in great detail and showed the desolate strip of land where he was isolated. He had reached his destination by means of a small water craft and had taken some provisions with him. He was soon caught in the freeze-up and had to build himself a small snow hut. Here he was existing, but he said he did not think he had

enough provisions to last him until relief would come in late spring and he thought he would probably die of starvation and exposure. As in the case of William Young recourse was had to an atlas and again it was discovered that the map was accurate and that the place indicated was beyond the regions of habitation. This ability to draw maps is interesting for in her normal state of consciousness she has no interest in geography.

The next case was that of a person who was confined to an insane asylum through the misrepresentation of some relatives who took this means of getting control of the man's fortune. He had had a number of unusual experiences and had been the victim of some political plots and after he was in the hospital, the mere recital of the things that had really happened, caused him to be considered paranoid. The recital ended with a pitiful plea — "please help me, for I am sick physically and can't live long and if I stay here much longer I shall really go mad."

A number of interesting writings followed all dealing with some phase of criminality, such as embezzling, forging or larceny. These criminal productions were all made before Violet Z—'s marriage. As in the case of Violet X—, after marriage, she had so many duties and cares that the writing was neglected. However in January of this year I saw her again and as of old we decided to amuse ourselves with the automatic writing. Violet Z — sat at the table and made some incoherent records with her right hand. The facility for smooth production seemed to have been lost. At last becoming impatient, I put the pencil in her left hand and said, "let's see what that will do!" Almost immediately the left hand (which she ordinarily cannot use for writing) began to fly across the paper and the resulting records were perfectly coherent. Then I decided it would be fun to see what would happen if I put a pencil in each of her hands. There seemed to be a momentary quiver in each arm and then both hands began writing simultaneously, each hand recording a different message and each denoting a different sex. The left hand wrote in small characters and claimed to be representing a girl by the name of Aneta Glane who expressed admiration for Violet Z—. The right hand wrote in bold flourishing style under the name of Daniel Raun and was pompous and boastful. After some time the left hand wrote: "if you will help me I can write better," while *simultaneously* the right hand recorded "I would like to let you but I am stronger and I hinder." The last thing written was, "I want to be strong, but I am weaker" — with the left hand while the right hand pranced all over the page in

huge letters saying, "Good, good — Good — GOOD!" This closed the set of experiments with Violet Z— for she was shortly after taken ill with influenza and I returned to Washington before she was well enough to attempt any more writing.

The criminal trend is so marked in these records that little comment should be needed and yet there is one remarkable feature that should be emphasized. In each story, the degree of the criminal phase decreases. The first tale deals with first degree murder — a cold, premeditated and deliberate deed which goes unavenged. The second deals with an indirect murder — the death resulting due to neglect of the adversary's condition after the fight. The third concerns a man who has escaped from prison where he is serving a long sentence for assaulting another and it shows him likely to pay the final penalty through retribution. The fourth case deals with criminal persecution and the others in lesser crimes of embezzling, forging and thieving. It is interesting to note that the criminal element finally disappeared and was absent in the last experiment.

In view of the history (the authority of the sister, the greater ability she displayed in school, her popularity and lastly the illness which threw the responsibility on Violet Z—), the parallel incidence in the stories of William Young and Charles You of the subservient character eliminating the dominating personality is quite significant. Consciously she was aware of no resentment toward the sister and would have been annoyed had such a feeling been ascribed to her, but the paraconscious did protest and the automatic activity gave vent to her disapproval. The expression of Aneta Glane's commendation of Violet Z— as well as Annie McGinnis' approval of Violet X— suggests a narcissistic trend.

The bisexual element in Violet Z—'s case shows up especially well in the last set of records. Here we have both sexes striving for dominance, the left side illustrating the female and the right hand the more energetic and vigorous male characteristics.

PART III

In *Part I* a number of facts were discussed which appeared pertinent to a study of these cases of automatic writing. In *Part II*, the cases themselves were presented and the more important phases were emphasized. An attempt will now be made to briefly summarize the points which have been illustrated.

1. Automatic activity and dissociation constitute a reversible reaction. The greater the tendency to automatism the greater the danger of dissociation. Violet X— as she attained her greatest proficiency in writing also came very near to having a complete cleavage of the personality. This was when "Man" insisted she should dance.

2. The Paraconscious is the chief abode of automatic activity and may consist of ~~dominant~~ dormant and active states, the latter of which are apt to produce personalities which are concomitant with the original personality. Mary Patterson knew all about Violet X— and what she thought and did — on the other hand, Violet X— knew nothing of what Mary Patterson thought. Annie McGinnis also knew what Violet X— thought and also what the two personalities "Man" and Mary Patterson thought.

3. The Personal Unconscious besides being the zone where the impressions of the most deeply repressed and lost experiences are left, also contains the elemental instincts of the personality and may so color the paraconscious activity as to suggest many unusual trends.

4. The two cases are of interest in that they illustrate on the one hand Stekel's theory that we have universal criminal impulses and on the other hand Freud's theory that we all have polymorphous perverse sexual tendencies, and that both show the bisexual disposition of the individual.

5. These cases further confirm Prince's experiments that the Paraconscious may act on its perceptions and function independently of the conscious. The drawing in the story of Charles You, of the skeleton of the foot is one of the corroborative pieces of evidence of this principle.

There are two questions which have suggested themselves during the preparation of this paper, but the scope of this article is too limited to allow of more than a brief statement of them. The first is a problem for the neuro-physiologist and concerns itself with habit formation. The last record discussed showed a hand that had not been accustomed to writing, suddenly exhibiting this activity independent of the simultaneous writing of the other hand. The neuro-muscular apparatus which controls this is apparently all connected — and an energy of some kind functions it, but of what character is it? Is it merely an overflow phenomenon or is it an independently functioning phenomenon?

The second question is one for which the psychiatrist will have to

find the answer. If it is seen that a certain tendency to dissociation in a given person exists and that in the secondary personality developed there is a suggestion of latent abilities and talents — would it not be worth while to deliberately break up the synthesis of the mental states and resynthesize the subject into a more culturally successful and economically efficient individual by means of either hypnotism or analysis, or both combined.

In conclusion I should like to state that in view of the evidence offered, I believe I am justified in assuming that automatic writing is an indicator of the fundamental factors underlying the personality and that it may be considered an especially valuable instrument in the study of mental disturbances of psycho-genic origin, to reveal the predominating elements of the patient's mental make-up.

NOTE. I wish to most especially express my appreciation to Dr. Winifred Richmond for permitting me to use the case of Violet X—, and for the unfailing encouragement and helpful suggestions she has offered during the preparation of this paper. I also wish to thank Dr. Johan Liljencrants and Dr. Nolan D. C. Lewis for the constructive criticisms they have made and on which I have acted. I further wish to express my indebtedness to the authors of the following books and articles, in whose works I have found many valuable ideas which have been of great assistance to me in the writing of this article.

1. ADLER, ALFRED. Study of Organ Inferiority and its Psychical Compensation, Nervous and Mental Disease Monograph Series No. 24. Trans. by Smith Ely Jelliffe.

2. ANGELL, E. B. A Case of Double Consciousness, — Amnesic Type, with Fabrication of Memory. The Journal of Abnormal Psychology, Oct. 1906.

3. B. C. A. My Life as a Dissociated Personality. The Journal of Abnormal Psychology, Oct., Nov., '08; Dec. '08; Jan. '09.

4. BLEULER, DR. PROF. E. Die Ambivalenz. Abstracted by C. R. Payne, The Psychoanalytic Review, Vol. 2, 1915.

5. BLEULER, HANS. J. P. Jakolsen's "Niels Lyhne" and the Problem of Bisexuality. Abstracted by J. S. Van Teslaar, The Psychoanalytic Review, 1915, Vol. 2.

6. BURROW TRIGANT. Notes with Reference to Freud, Jung and Adler. Journal of Abnormal Psychology, 1917-18.

7. CARRINGTON, HEREWARD. Freudian Psychology and Psychical Research. (A Rejoinder) The Journal of Abnormal Psychology, May, 1915.

8. CORIAT, ISADOR H. Experimental Synthesis of Dissociated Memories in Alcoholic Amnesia. The Journal of Abnormal Psychology, August, 1906.

9. CORIAT, ISADOR H. The Lowell Case of Amnesia. The Journal of Abnormal Psychology. Aug., Sept., 1907.

10. CORY, CHARLES E. A Divided Self. Journal of Abnormal Psychology, 1919.

11. IBID. A Subconscious Phenomenon. The Journal of Abnormal Psychology, 1919.

12. DEWEY, RICHARD. A Case of Disordered Personality. The Journal of Abnormal Psychology. Oct, Nov., 1907.

13. DONLEY, JOHN E. On Neurasthenia as a Disintegration of Personality. The Journal of Abnormal Psychology, Vol. 1, June, 1906.

14. DOOLEY, LUCILE. Psychoanalytic Talks [to be published], 1921.

15. DOWNEY, JUNE E., and ANDERSON, JOHN E. Automatic Writing. The American Journal of Psychology, April, 1915.

16. FOX, CHARLES D. Report of a Case of Dissociated Personality, Characterized by the Presence of Somnambulistic States and Ambulatory Automatism. The Journal of Abnormal Psychology, Aug.-Sept., 1909.

17. FREUD, SIGMUND. Three Contributions to the Theory of Sex.

18. GOLDSCHMIDT, RICHARD. Experimental Intersexuality and the Sex Problem. The American Naturalist, Dec., 1916.

19. GAVER, EARL E. A Case of Alternating Personality, Characterized chiefly by

Ambulatory Automatism and Amnesia with Results of Hypnotic Experiments. The Journal of the American Medical Association, July 4, 1908.

20. Hart, Bernard. The Conception of the Subconscious. The Journal of Abnormal Psychology, Feb.–March, 1910.

21. Ibid. The Psychology of Insanity. Cambridge — At the University Press, 1916.

22. Hyslop, James H. Apparent Subconscious Fabrication. The Journal of Abnormal Psychology, Dec. '06.

23. James, Wm. The Principles of Psychology. Henry Holt and Co., N. Y.

24. Janet, Pierre. L'hysterie Maladie Mentale. Abstracted by Charpentier in the Journal de Psychologie, 1908.

25. Ibid. On the Subconscious. The Journal of Abnormal Psychology, 1907, Vol. 2.

26. Jastrow, Joseph. On the Subconscious. The Journal of Abnormal Psychology, Vol. 2, 1907.

27. Kempf, E. J. The Autonomic Functions and the Personality.

28. Liljencrants, Johan. Spiritism and Religion. Devin Adair Co., New York, 1918.

29. Long, Constance. An Analytical View of the Basis of Character. Psychoanalytic Review, 1920.

30. Lodge, Oliver. Evidence of Classical Scholarship and of cross-correspondence in some new Automatic Writings. Proceedings of the Society for Psychical Research, 1911, Vol. XXV.

31. Mayer, Edward E. A Case Illustrating So-called Demon Possession. The Journal of Abnormal Psychology, Oct., Nov., 1912.

32. McDougall. The Physical Basis of Mental Dissociation. 13 M. J., Oct. 24, 1908.

33. Melcher, Webster A. Dual Personality in Handwriting. The Journal of the American Institute of Criminal Law and Criminology, August, 1920.

34. Mitchell, T. W. A Study in Hysteria and Multiple Personality with Report of a Case Proceedings of the Society for Psychical Research, Nov. 1912.

35. Ibid. Some Types of Multiple Personality. Pr. of Society Fr. Psychological Research, Nov., 1912.

36. Ibid. Psycho-Physical Discussion of Multiple Personality. Proceedings of the Society for Psychical Research, Nov., 1912.

37. Moll, Albert. Hypnotism. Scribner and Welford, N. Y.

38. Monteith, M. E. Automatic Writing, its uses and its verification. Nineteenth Century, Vol. 83, 1918.

39. Münsterberg, Hugo. A Symposium on the Subconscious No. I. The Journal of Abnormal Psychology. Vol. 11, 1917, Apr., May.

40. O'Malley, Mary. Certain Pluriglandular Anomalous Functions Associated with Psychopathic Sexual Interests. The Journal of Nervous and Mental Diseases. Vol. 48, 1918.

41. Pfister, Oskar. Die Psychologische Enträtselung der Religiösen Glossolalie und der automatischen Kryptographie. Jahrbuch fur Psychioanalytische und Psychopatologishe, Forsch ungen, Band 111.

42. Pierce, Walter Franklin. The Doris Case of Quintuple Personality. The Journal of Abnormal Psychology. Vol. 11, 1916-17.

43. Pillsbury, W. B. The Fundamentals of Psychology. The Macmillan Co., 1916.

44. Prince, Morton. Co-Conscious Images. The Journal of Abnormal Psychology, Vol. XII, 1917-1918.

45. Ibid. Experiments to Determine Co-Conscious Ideation. Journal of Abnormal Psychology, April-May, 1908.

46. Ibid. Hysteria from the Point of View of Dissociated Personality. Journal of Abnormal Psychology, June-July, 1907.

46a. Ibid. The Dissociation of a Personality. Longmans, Green & Co., 1906.

46b. Ibid. Miss Beauchamp: The Theory of the Psychogenesis of Multiple Personality. The Journal of Abnormal Psychology, June-Sept., 1920.

46c. Ibid. The Structure and Dynamic Elements of Human Personality. Journal of Abnormal Psychology, Dec., 1920, March, 1921.

47. Ibid. The Subconscious Setting of Ideas in Relation to the Pathology of the Psychoneuroses. The Journal of Abnormal Psychology, Vol. 11, 1916-1917.

48. Ibid. On the Subconscious. The Journal of Abnormal Psychology, June-July, 1907.

49. Prince, Morton, and Peterson, Fred. Experiments in Psycho-Galvanic

Reactions from Co-Conscious Ideas in a Case of Multiple Personality. The Journal of Abnormal Psychology, October, 1906.

50. Prince, Morton. The Unconscious. The Macmillan Co., New York, 1914.

51. Ibid. The Unconscious. The Journal of Abnormal Psychology. Oct.-Nov., '08; Dec, '08; Jan., '09; Feb.-March, '09; Apr.-May, '09.

52. Ibid. The Psychogenesis of Multiple Personality. The Journal of Abnormal Psychology, 1919.

53. Putnam, J. J. Freud and His Work. The Journal of Abnormal Psychology, 1909-10.

54. Ibid. The Work of Sigmund Freud. The Journal of Abnormal Psychology, 1917-18.

55. Ribot, Theodore. On the Subconscious. The Journal of Abnormal Psychology. Vol. 11, 1907.

56. Rosenstein, Gaston. Die Theorien der Organminder wertigkeit und der Bisexualität in ihrer Beziehungen zur Neurosenlehre. Jahrbuch für Psychoanalytische U. Psychopathologishe Forschungen Band 11.

57. Sidgwick, Mrs. Henry. A Reply to Dr. J. Maxwell's Paper on "Cross-Correspondence and the Experimental Method." Pr. of Society for Psych. Research. Vol. 26, July, 1913.

58. Sidis, Boris. A Clinical Study of a Dream Personality. The Journal of Abnormal Psychology. Vol. XII, Aug., 1918.

59. Ibid. Multiple Personality. 1905.

60. Sidis, Boris. Psychopathological researches — studies in mental dissociation. G. E. Stechert, New York, 1902.

61. Stekel, Wilhelm. Die Sprache des Traumes.

62. Troland, Leonard. The Freudian Psychology and Psychical Research. The Journal of Abnormal Psychology. Feb., March, 1914.

63. Verrall, Mrs. A. W. A series of Automatic WRITINGS. Pro. of the Society for Psychical Research. Vol. XX, Oct., 1906.

64. White, Wm. A. The Foundations of Psychiatry. Nervous and Mental Disease Monograph Series, No. 32, 1921.

65. Ibid. The Unconscious. The Psychoanalytic Review, Vol. 11, 1915.

PSYCHOPATHIC PERSONALITY
REPORT OF A CASE[1]

BY MARTIN W. PECK, M. D.

BOSTON, MASS.

IN any psychopathic clinic, patients presenting a bewildering array of psychoses, neuroses, episodic emotional states and various delinquencies pass in review. These are roughly classified into groups on the descriptive level, and here and there some interpretations of the mental mechanisms involved in individual cases are accomplished.

The attention of the psychiatrist is constantly drawn to the "constitutional make-up" of these people which antedates and underlies the more acute manifestations which bring them to the hospital. In this field there is vagueness and obscurity. Constitutional and environmental factors dovetail in a manner to render their respective valuation difficult or impossible. At the same time it must be true that in mental disorders, clinical pictures which on the surface are similar, can only be accurately compared if the unknown quantity of constitutional make up; the original germ stuff and human spirit of which the individual is composed, be given due consideration. Opportunity is infrequent for study to be made of types of personality not obscured by mental illness nor modified by emotional or social situations.

The following case was under observation for several months following recovery from a major hysterical attack. The history showed freedom from unusual environmental stress; and neither delinquencies in the ordinary sense of the term, nor special emotional instability had been evidenced. At the same time the defects of personality resulted in such difficulties of social adaptation that an extensive period of custodial care appeared necessary. Here seemed an opportunity to study a special type of constitutional make-up not obscured by symptoms due to environmental influence or exogenous disorder.

The patient, Violet, age 19, was admitted to the Boston Psychopathic Hospital May 4, 1921, with a history of being bedridden for two months without apparent physical cause, and of having exacted

[1] This case was presented before the Boston Society of Neurology and Psychiatry, November 17, 1921.

such constant service from a solicitous mother and grandmother as to make home care impracticable. The condition was precipitated by a mild attack of bronchitis, from which she appeared to recover; after which she went back to work only to return home suddenly in a panic over her physical state, and take to her bed again. Within a period of two years there had been two previous attacks duplicating in every essential feature the one present on admission.

Her physical condition on entrance to the Hospital was one of complete motor inactivity, with inability to speak above a whisper. The mental picture was one of plaintive, fretful hypochondria, with a generalized projection of morbid interest on to many internal organs and body regions. Physical examination showed a tall, slender but well nourished girl with abundant flaxen hair and very fair complexion, her natural pallor exaggerated by confinement. Secondary sex characteristics were normal. There were some minor symptoms of vasomotor instability and a rather rapid heart rate; otherwise no abnormalities were noted. All laboratory examinations were negative. None of the ordinary stigmata of hysteria were elicited. Mentally she showed a rather querulous, complaining attitude with moderate apprehensiveness, in part determined by her new and strange environment. She was at all times clear and oriented and neither evidenced then or at any other time psychotic symptoms. In spite of her listlessness and apparent weakness, she showed no special fatigue from interviews, and maintained the reality of her invalidism with considerable spirit when any attempt was made to suggest its mental origin.

From May 4 to June 28 Violet's condition changed but little. She was for the most part completely inert, hardly crooking a finger unaided; fed, turned and tended in every way as a helpless babe. If lifted into a chair she would slide to the floor like a bundle of old rags. This picture was a few times momentarily interrupted by sudden activity as when she seized and clung to her mother's arm as the latter started to leave after a visit. All routine methods of treatment and management seemed without avail to modify in any way her clinical state. Toward the end of June hydrotherapy was instituted and at the same time an active course of persuasive and suggestive psychotherapy carried on. In two weeks she was completely well, the transition being gradual over that period. She first began to feed herself and help the nurse when turned in bed. Soon she was in a wheel chair, later walked stiffly supported by furniture and walls,

and then suddenly one day began to dance and gave evidence from then on of complete muscular control.

July 12 marked the end of the hysterical state and also the beginning of a period of disagreeable activity and a type of conduct probably best characterized as malicious mischief, which persisted till her transfer to another hospital; it has there continued, and according to all outside evidence, is quite characteristic of her previous behavior at home. So far as general management of this girl was concerned, her earlier paralyzed state offered some advantages over the normal one. From the time of her recovery an unbroken stream of complaints from others poured in to the physician in charge. Nurses, occupational aids, social service representatives, patients, patients' relatives and hospital employees all expressed their tale of grievance. On August 1 she was sent to a convalescent home as a desirable change en route to normal living. In three days the officials asked to return her to the hospital, but were persuaded to make further trial. In two weeks they returned her without asking, saying she was into everything that did not concern her, teased other patients, was impertinent and "impossible."

Her condition during her stay in the Hospital after that time changed but little. Physically, she appeared consistently in robust health. She showed no neurotic interest in her own body, and on occasion of minor ailments such as a coryza, no hypochondrical tendencies developed. A few times, after some slightly upsetting event, she remained for a day in bed with no other explanation than that of being tired, and her general limpness on such occasions hinted at an easy recurrence of inertia in face of serious difficulties. She was always neat and well dressed, was good looking, well built, graceful and attractive in appearance.

She showed uninterrupted psychomotor activity of a special type; she was boisterous, impudent and interfering; she teased and tormented other patients, picked out their weaknesses and found sore points as targets for her wit and ridicule. In general she seemed to possess a diabolical power to upset others often in a way that attached more blame to them than to herself, although on the whole she was not sly nor deceitful. This activity was, for the most part, nonselective; it appeared to make little difference to her toward whom she directed her shafts. She was never obscene, nor really profane nor vulgar, although she would employ at times a little coarseness for the special purpose of upsetting some refined and placid fellow patient.

Literally she could travel the length of a ward, leaving in her wake a trail of lamentation and woe. Her motor activity was manifested spasmodically in such pranks as running over and under beds, climbing on top of closets, unscrewing lamp bulbs, etc. She acquired the art of mimicking various animals and usually crowed lustily out of the window in rooster-like fashion in the early morning hours. All this of course suggested a hypomanic state, but it never went beyond what would be wholly in order at a lively week-end house party, though quite inappropriate in a hospital ward. She often went out on parole with her mother to the shopping district or the theatre, and conducted herself becomingly. As an extreme example of her depredations may be noted a two-day period which at one time preceded her temporary removal to another ward. During that time one patient was in tears because Violet had told her some test performed the day before meant she had syphilis; another was deeply agitated over the transfer to a state hospital which Violet had predicted for her; a third asked medicine for headache caused by having her head bumped against the wall; another was in bed because she had been kicked in the side; and still another showed marks on her arm where Violet had bitten her. Yet with all this, patients did not necessarily dislike her, and several expressed regret when she was transferred to other wards.

Her mood was, on the whole, elevated but was apt to be irritable and harsh with loud laughter and ironical witticisms. Mixed with this almost continuous activity were occasional short periods of quiet and brooding but never any real depression. She never showed deep anger and seemed to bear no profound malice against anybody. In the minor physical encounters with other patients into which her meddlesome activity led her, she was apt to get the worst of the bargain but bore no resentment. Her interests, such as they were, seemed wholly objective with no evidence of introversion or phantasy life. Her attitude toward the hospital was at all times mildly hostile and critical, and she seldom showed the slightest gratitude for any service rendered or efforts in her behalf. She gave the impression of feeling that the whole matter was the hospital's affair and not hers, and that it was incumbent on it to provide for her future. Although constantly asking how much longer she was to be detained, she took little initiative toward getting her discharge and offered only vague plans, poorly thought out, for her future.

Her relations with the physicians of the staff were at all times friendly, but marked by shallowness of affect on her part, without

evidence of deep feeling of any character. She never courted nor avoided special interviews, and it seemed impossible by any sort of tactful approach to establish cordial relationships on the one hand, or, on the other, to arouse hostility or resentment by plain talk and frank criticism. She might sulk a little, while listening to a discourse on her faults, but assumed her old manner as soon as the subject was changed. Left to herself, she prattled on concerning vague philosophies of life, interposing some humorous and sarcastic comment on ward routine, complaints about other patients and trivial personalities in general. She never showed the slightest remorse or feeling of blame, nor did she, on the other hand, display vanities or exaggerated self-esteem. Adverse criticism slid easily from her shoulders, or she adroitly shifted responsibilities on to somebody else, most often her mother and grandmother. Toward them or others of her family and acquaintances she showed but little affection or consideration.

On sex matters she talked frankly, although she never brought up the subject. She evidently had wholesome instruction from her mother and no facts were elicited at any time to show special conflict or abnormal interest. Sexual experience and autoeroticism were denied. The most significant thing brought out by discussion of this topic was her impersonal attitude. She talked in a loud voice without regard to being overheard and, in a way, causing more embarrassment to the interviewer than to herself. She propounded various generalities, dealing with double moral standard, duties of a wife, obligations of motherhood, venereal disease, etc., in a manner showing interest but as though dealing with a detached problem such as philosophy or politics rather than something quite vitally personal.

The family history of this girl is bad; on both sides there have been insanity and eccentricity. Her father died by accident when she was eight years old. He is said to have spent many months in bed at the age of sixteen without any apparent cause other than that he had "grown too fast." Her mother is an estimable woman who has been self supporting as telephone operator since the death of her husband, but is nervous and peculiar, and lacks stamina. She cannot stick to a point in conversation, has little decision, and shows gross defect in capacity for logical thought. For many years she has leaned heavily for moral support on the social service department of one of the large churches. A maternal grandmother, whom the patient is said to resemble in appearance and disposition, was noted for her eccentricities. One of her customs was to sit behind closed blinds on Sunday morning

and make uncomplimentary remarks about her fellow townspeople as they passed on their way to church. A number of the maternal aunts are Christian Scientists. Analytical study of family relationships and early influences has been difficult owing to lack of serious co-operation on the part of the patient and the poorly balanced history available from outside sources. The father traveled, and had little contact with his daughter for that reason. A younger sister died when patient was six years old and nothing significant is evident in their relationship. From the time the patient was eight years old she was under the immediate care of her grandmother on account of the necessity for the mother to work, and there was often difference of opinion between the two adults upon matters of management. During her early life Violet was quite affectionate toward her mother and had been known at times, in the latter's absence, to kiss her dress hanging in the closet. As she grew older she became less demonstrative and gradually quite indifferent and cold, although she never showed real animosity. A number of different aunts have entertained the patient and two have had her in their homes during the first part of her previous hysterical illnesses. All have now washed their hands of her and refuse to permit further visits.

As a child she was physically well and showed no special neurotic traits. From seven to twelve she had frequent night terrors, in part apparently the result of an unpleasant experience with an old man in a neighboring house who made some sexual advance to her. She was quite upset and frightened temporarily over this, but discussed it freely at a later date with her mother and apparently suffered no lasting ill effect. During her early teens she had a number of seizures quite evidently of a hysterical type. From early years she had shown disagreeable traits of personality; as a young child she was pert, bossy, contradictory and bold. She could never get along well with other children, but has one life-long friend, a girl two years younger, whom she frequently meets and who seems fond of her.

At twelve years of age the patrolman on the beat was enlisted to keep her from wandering into the neighbors' homes, where she would be insolent when told to leave. About the same time a local physician complained that she had tormented his children left sitting in his automobile while he made a call. She was interested in animals but was rather cruel in a special teasing way, such as enjoying watching the distress of a kitten put on a high mantel where it dared not jump down. She did well enough in school so far as studies were concerned

and left during her second year of high school on account of a minor illness. She was, however, in constant trouble with her mates and complaints of her "unfortunate disposition" came frequently from her teachers. For one of them only did she show any fondness. Concerning the latter, she once said to her mother, "Miss Brown is so nice you never want to tease her." She was critical of nearly everybody with whom she came in contact and always took pleasure in harsh ridicule of their peculiarities. Admiration, envy, jealousy or extreme dislike were seldom in direct evidence. She never was truthful and instances are at hand of her stubborn adherence to falsehoods in face of direct proof to the contrary. She has showed at all times considerable artistic interest and some ability, particularly in dancing, dramatics and the various handicrafts. She is described as being always busy and on the go, and a great talker. Her mother spoke of this as "jabbering" and told of her constantly asking questions, when there was nothing else to talk about, concerning things to which she knew the answer perfectly. In recreation her tastes have run to noisy, frolicking times with jazz music, dancing and loud laughter. She manifested rather less interest in men than the average girl and, although she received some transient attention, has never been popular, always preferred group activities and showed little tendency to "pairing off" or flirtation. Her disposition complicated family living arrangements at all times and twice landladies have requested in no uncertain terms that other quarters be obtained. An ultimatum was issued by the owner of their present home that if Violet returned they must move again.

Her working career since she left school at sixteen has been interrupted by her various illnesses, and has also been accompanied by maladjustments similar to those in other phases of her home and social life. She had a number of minor clerical positions, usually leaving suddenly for some trivial reason such as poor ventilation, too much eye work, stair climbing, etc. In each place she stayed long enough to stir up trouble among her fellow workers. Her most permanent position was just previous to the last breakdown when she was for four months in a private office where her employer only came in twice daily to look over the mail and there were no other employees. Here she gave satisfactory service but at the end left so precipitately as seriously to inconvenience the business routine.

At one time when there was a demand for tall blondes in the chorus of a musical comedy she obtained a position, and was about to

sign a contract to go to the Pacific Coast, when her mother interfered. Her attempt to go on the stage seemed connected with her interest in dancing and in no way motived by the glamour and romance of the life. She seemed in many ways relieved to have her mother intervene, although for a long time she complained of such interference as a blow to a possible career. She never was in bad company and made no other attempt to branch out for herself in such radical fashion. She showed no consistent plan or purpose for her future life, always approaching the subject flippantly.

The patient's first breakdown of a nature similar to the recent one occurred in the fall of 1918, and was in every way a duplicate; the helplessness developing after an attack of influenza. She was at a private sanitarium from December 5, 1918, to March 12, 1919, recovered completely, and proved to be a disturbing factor among other patients in the later stage of her convalescence. The second attack came on after a tonsilectomy in July, 1919, which left her weak, listless and complaining, until finally she could not be induced to get out of bed. She was again at the sanitarium during September and October. On her return home she had a mild relapse with recurrence of some of the old symptoms. Her family persuaded her to try Christian Science, rather against her will as she preferred to return to the sanitarium. Somnambulistic phenomena developed for the first time during this period, resulted in her gaining her point, and gave strong evidence of having been deliberately simulated. These episodes had a morbid dramatic quality when Violet would start on a tour of the house, rushing up one flight of stairs and down another, with members of the family in frantic and breathless pursuit. On one occasion she ran to the street in her night clothing. She was sent back to the sanitarium for a short period and the somnambulism gradually disappeared and has never returned. For a few nights on first going back she roamed the hospital after barricades, which had been placed before her door to warn the nurses, had been adroitly and silently removed.

Observation and study of this girl over a considerable period resulted in arriving at the following conclusions concerning her; these are mainly on the descriptive level as no deep analytical study was possible, and are advanced as impressions, speculative rather than final, in character.

1. She showed a marked lack of those gentler qualities of the human personality, such as kindness, sympathy, pity, thoughtfulness

and unselfishness; partly a defect in the altruistic sense, and partly the absence of some of the higher psychic components of more personal love.

2. Approaching the latter subject from a psycho-biological standpoint, there was a certain sexlessness about this attractive girl which seemed clearly demonstrable. It was shown by observation and the history of her attitude toward men; by her manner of approach to the general topic of sex in formal interviews; and most of all by the impression she made on those in daily contact with her. There was a striking lack of ordinary feminine charm and appeal and a statue-like coldness, present even during most friendly and merry moods, a lack not easy to describe but plainly to be felt. It would be difficult to imagine, for example, even the most accomplished Lothario successfully drawing her into a flirtation or being able to keep a sustained interest in the pursuit. The spark of womanliness within her, whether good, bad or indifferent seemed to glow but feebly. If we view the reproductive function in its broader sense all these things may be looked upon as defects in that sphere.

3. There was also missing in this patient the ordinary pride, and sensitiveness to criticism; with absence of embarrassment and feeling of humiliation, in the face of ignominious situations. Without open defiance there appeared to be present complete disregard for the opinion of others. In these qualities may be noted a lack in the operating forces of the herd instinct, at least that part of it comprised in the tendency to be like one's fellows.

4. On the positive side of the picture we note this girl expressing herself, and gaining her major satisfaction from disagreeable activity directed toward others, and this of a teasing, tormenting, generally unkind order. Innumerable detailed examples might be given as illustrations. The extent of these traits makes it fair to see in them evidences of refined or psychic sadism, implying some sort of abnormality in psycho-sexual development.

5. All of the above qualities, of course, give poor equipment for adaptation to normal life. The acute hysterical states may be considered as reactions of a primitive order in the face of difficulties, a reaction familiar in benign stupors, and having its prototype in the behavior of some of the lower animals, which assume immobility in the face of danger.

If in order to carry out the scheme of the instincts we are at liberty to look upon these latter phenomena as defects in the self preservative

field, we can conclude that this patient presented demonstrable personality defects in the combined spheres of sex, herd and self.

It is hard to view the outcome of this case in other than a pessimistic light. To modify the course by personal influence in the direction of psychological reconstruction seemed out of the question. One can only hope that under institutional environment tardy personality development may spontaneously take place and fit the girl for a better degree of social adaptation.

ANALYZING A FREUDIAN ANALYSIS

BY S. A. TANNENBAUM, M. D.

ONE of the most dramatic and artistic analyses of a lapse of memory, one frequently referred to by psycho-analysts as a convincing demonstration of the truth of the psycho-analytic theories, is Professor Freud's analysis of the forgetting of the insignificant word "aliquis" in a line from Virgil's *Æneid*. That the reader may be able to follow our argument, we reproduce Professor Freud's analysis (*The Psychopathology of Everyday Life*, pp. 17–22) *in extenso:*

Last summer, while journeying on my vacation, I renewed the acquaintance of a young man of academic education, who, as I soon noticed, *was acquainted with some of my psychological writings*. In our conversation we drifted — *I no longer remember how* — to the subject of the social position of the race to which we both belong. He, *being ambitious*, bemoaned the fact that his generation, as he expressed it, was destined to grow to waste, that it was prevented from developing its talents and gratifying its desires. He concluded his passionate speech with the familiar verse from Virgil: "Exoriare . . . " in which the unhappy Dido leaves her vengeance upon Æneas *to posterity*. Instead of "concluded," I should have said, "wished to conclude," for he could not finish the quotation, and *attempted to conceal the obvious gap* in his memory by *transposing the words:*

"Exoriar(e) ex nostris ossibus ultor!"

Finally, somewhat resentfully, he said: "Please don't make such a *mocking face*, as if you were gloating over my embarrassment, but help me rather. There is something missing in this verse. How does the complete line really go?"

"With pleasure," I answered, and cited it correctly, thus:

"Exoriar(e) aliquis nostris ex ossibus ultor!"

"How stupid to forget such a word!" he said. "By the way, I understand you claim that *forgetting is not without its reasons:* [Italics ours throughout.] I should be very curious to find out how I came to forget this indefinite pronoun 'aliquis.' "

I gladly accepted the challenge, as *I hoped to get an addition to my collection*, and said, "We can easily do this, but I must ask you to tell me frankly and without any criticism everything that occurs to your mind after you focus your attention, *without any definite purpose*, on the forgotten word."

"Very well; the ridiculous thought comes to me to divide the word in the following way: 'a' and 'liquis.' "

What does that mean?

"I don't know."

What else does that recall to you?

"My mind goes on to 'reliques' — 'liquidation' — 'fluidity' — 'fluid.' — Does that tell you anything?"

No, not by far! But continue!

"I now think," he said, laughing sarcastically, "of Simon of Trent, whose relics I saw two years ago in a church in Trent. I am thinking of the old accusation of blood-guilt which is now again being brought against *the Jews*, and of the writings of Kleinpaul, who sees in these alleged sacrifices reincarnations or revivals, so to speak, of *the Savior*."

This stream of thoughts is not unrelated to the theme which we were discussing before the Latin word escaped you.

"Right. I now think of an article in an Italian journal which I read recently. I believe it was entitled: 'What St. Augustine says about Women.' What do you make of this?"

I say nothing.

"Now I think of something which surely has no connection with our theme."

Please refrain from all criticism, and —

"Oh, I know! I recall a handsome old gentleman whom I met on my journey last week. He was a genuine '*original*.' He looks like a big bird of prey. His name, if you care to know, is Benedict."

Well, at least *you give a grouping of saints and Church fathers:* 'St. Simon,' 'St. Augustine,' and '*St. Benedict*.' I believe that there was a *Church father named* 'Origines.' Three of these, moreover, are Christian names, like 'Paul' in the name 'Kleinpaul.'

"*Now I think of 'St. Januarius'* and his blood miracle — I find that these thoughts go on mechanically."

Just stop a moment; both 'St. Januarius' and 'St. Augustine' *have something to do with the calendar*. Will you *recall to me the blood miracle?*

"Surely you know all about it! The blood of St. Januarius is preserved in a phial in a church in Naples, and on a certain holiday it liquefies by virtue of a miracle. The people make much of this miracle, and become greatly stirred up if it is retarded, as happened once during the French occupation. Thereupon the General in command — or am I mistaken, was it Garibaldi? — took the priest aside, and, pointing, significantly to the soldiers arraye without, expressed the hope that the miracle would very soon transpire. And it actually took place . . ."

Well, and what else? Why do you hesitate?

"Something has just occurred to me . . . but it is too intimate a matter to impart . . . besides, I see no connection and no necessity for telling it."

I will take care of the connection. Of course I cannot compel you to

reveal what is disagreeable to you, but then you should not have asked me to tell you how you forgot the word 'aliquis.'

"Really? Do you think so? Well, I suddenly thought of a lady from whom *I could easily get a message that would be very unpleasant to us both.*"

That she missed her period?

"How can you guess that?"

That is no longer difficult. You prepared me for it sufficiently. Just think of the saints of the calendar, the liquefaction of the blood on a certain day, of the commotion if the event does not take place, and the distinct threat that the miracle must take place. . . . Indeed, you have elaborated the miracle of St. Januarius into a clever allusion to the woman's courses.

"It was surely without my knowledge. And do you really believe that my inability to reproduce the little word 'aliquis' was due to this anxious expectation?"

That seems to me beyond doubt. Don't you recall dividing it into 'a-liquis' and the associations: 'reliques,' 'liquidation,' 'fluid'? Shall I also add to this connection the fact that St. Simon, to whom you got by way of the reliques, *was sacrificed as a child?*

"Please stop. I hope you do not take these thoughts — *if I really entertained them* — seriously. I will, however, confess to you that the lady is Italian, and that I visited Naples in her company. But may not all this be coincidence?"

I must leave to your own judgment whether you can explain all these connections through the assumption of coincidence. But I assure you that *every similar case that you will analyse will lead you to just such remarkable 'coincidences'!*

The way the forgetting occurred must be construed thus: The speaker had deplored the fact that the present generation of his race is being deprived of its rights, and, like Dido, he had predicted that a new generation would take upon itself vengeance against the oppressors. So, then, *he has expressed a wish for posterity.* At that moment a *contradictory thought intruded itself;* 'Do you really earnestly wish for posterity? That is not true. In what a predicament you would be if you were now to receive information that you may expect posterity from a certain quarter *which you have in mind!* No, no posterity, — no matter how much it may be needed for vengeance.' This contradiction asserts itself . . . by establishing an extrinsic association between one of the elements of his idea and one of the elements of the objectionable wish, [which is] brought about in an extremely strained manner by an apparently artificial detour of associations. . . . We have [here] a second mechanism of forgetting, viz.: the disturbance of thought through an inner contradiction emanating from the repression.

Professor Freud undoubtedly intended the above analysis as a scientific demonstration of the principle enunciated by him in the

concluding sentence. We are therefore warranted in submitting it to a criticism in the manner characteristic of exact science.

1. In the first place, then, it must be pointed out that Professor Freud's account of the analysis is inadequate from a scientific point of view because the experiment, if we regard it as such, was not taken down immediately and verbatim by an impartial and unprejudiced stenographer. We are therefore in no position to judge how much Professor Freud suggested to the subject and what fine nuances in the subject's words he overlooked or ignored. In a psychological experiment of this nature the slightest gesture, a peculiar intonation of the voice, a wrinkling of the forehead, a look, etc., may be of significance. Errors of commission and omission are altogether too frequent in such experiments. As Professor Freud's report stands now it has no more value than hearsay or anecdotal evidence and that is little enough in science.

2. The subject, a young man with academic education, was acquainted with Freud's theories as to forgetting and was therefore not a fit subject for an impartial, unprejudiced investigation, no matter how honest he may have intended to be. Professor Freud encouraged the young man to associate under the impression that if he continued long enough they would discover *the* cause for — i. e. the meaning of — the forgetting. This is out and out suggestion. Professor Freud should have reminded the gentleman that there are, as he himself says elsewhere, other causes for forgetting besides repression. His failure to do this is a serious defect in his experiment.

3. We are told absolutely nothing about what the young man's thoughts had been prior to the discussion in which the forgetting occurred. Had he thought of the young Italian woman that morning? When had he last heard from her? Was there more reason for worrying about her menses now than previous months? Had he ever given her menses any thought? Many questions along this line occur to us, but the reader will supply these for himself. Their significance is obvious. If the woman's menses had not engaged his (conscious) attention whatsoever we cannot accept the theory that the forgetting of the word "aliquis" was "determined" by that, unless we are given more logical proof than that offered us by Professor Freud.

4. Nothing is told us about how much English the young academician knew, or whether he was in the habit of seeing English words in foreign words, whether he thought in English, and whether he usually thought of blood as a liquid (instead of a fluid).

5. It would have been of the utmost importance for us to know whether the young man knew the exact meaning of the verse in question or whether he knew it only vaguely. It so happens that this verse ("Exoriare aliquis nostris ex ossibus ultor," — *Æneid*, Book IV, 625) is capable of two interpretations, one being a prayer for the coming of an unknown avenger ("May an avenger issue from our ashes!") and the other an address to an avenger ("Arise from our ashes, thou avenger!"). In the former the word "aliquis" is practically equivalent to "ignotus" *i. e.*, unknown, whereas in the latter it has the force of "some one" who is fully known. If the young man's ideas about the exact meaning of the sentence were vague we would have a sufficient explanation for his inability to recall the adjective or pronoun that should modify the substantive "ultor." That this was really the case seems to be proved by the fact that he forgot this adjective rather than some other part of the verse.

6. The experiment might have been of real value to psychology if Professor Freud had not committed the fatal blunder of supplying the missing word. Had he not done so it would have been interesting to see whether the young man's associations would have brought him to the forgotten word and what his associations would have been. As it was, Professor Freud is open to the charge of having directed the young man's attention in the direction of something which may already have been consciously occupying his mind.

7. It was an error on Professor Freud's part to ask, "What else does it recall to you?" when the young man had as yet recalled nothing. And it is a serious error on Professor Freud's part to assume that the transposition of the words represents an "attempt to conceal the obvious gap" in the gentleman's memory.

8. An even more serious error — and one fatal to the scientific character of the experiment — is Professor Freud's telling the young man that he had brought together a group of saints and church fathers, especially as he had mentioned only two. There is no reason for connecting the word "original" with Origines, and there is nothing to show that the young man knew of the existence of Origines or that Origines was a church father. Furthermore, the young man did not mention "*St.* Benedict"; he had spoken only of a man named "Benedict." Had Professor Freud asked him to associate to "Benedict" or to the "original," the subsequent associations would in all likelihood have been very different from what they were. So, too, Professor Freud might have asked the young gentleman to associate to

"St. Simon," to "Kleinpaul," to "Benedict," to "bird of prey," or to the false charges against the Jews, or to the article about women, and in each case the subsequent associations might — nay, would — have been very different. His not doing so proves the thoroughly arbitrary and accidental character of the whole procedure. It was only after Professor Freud's lead that the young man said, "Now I think of St. Januarius and his blood miracle." In a properly conducted scientific experiment the investigator should have asked nothing, made no comments, but should have allowed the subject to continue to associate without guidance or interruption. It must be noted that up to the point where Professor Freud speaks of the grouping of saints the young man had said nothing that might be construed as an allusion to what follows.

9. That Professor Freud actually directed the young man's mind to the subject of sex and the sexual function is proved by the fact that it was he, and not the young man, who first spoke of the calendar and connected these with the "blood miracle," thus suggesting "monthlies, menses." No sooner had the young man mentioned "St. Januarius" and the "blood miracle" than Professor Freud hastened to refer back to "St. Augustine" and to suggest that these had "something to do with the calendar." And he followed this suggestion up with a question concerning the blood miracle, thus getting the young man to concentrate on blood. Professor Freud no doubt knows — and took advantage of his knowledge — that there are many young men, journeying on their vacations, who "could" get news from somewhere that a certain person is worried about her menses. It may be of significance in this connection that when Professor Freud supplied the missing word he "made a mocking face." (Think of a scientist beginning an experiment with "a mocking face"!)

10. In his discussion of the forgetting of the word "aliquis," Professor Freud tells us that "the usual way of bringing to consciousness hidden ideas" is for the subject 'to tell frankly and without any criticism everything that occurs to his mind after he has focused his attention, *without any definite purpose*, on the forgotten word.' One has only to read the reported analysis to see that the actual procedure does not in the least correspond to this description. The young man began his free associations with a very definite purpose: to discover the cause of the lapse in something of a repressed and tabooed nature. Professor Freud did everything in his power, by direct and indirect suggestions, to lead the young man to tabooed and sexual

matters. And, furthermore, the young man was not permitted to associate freely; his mind was constantly being directed by Professor Freud's questions and suggestions.

11. In a properly conducted scientific experiment, undertaken with the object of determining why a scholar forgot a particular word in a given verse in a foreign tongue, it would be of the utmost importance to determine what percentage of students (of a certain age and in a given state of health, etc.), who had learned that particular verse a certain number of years ago can recall that verse correctly. It would also be important to estimate how many forget the significant words, how many the insignificant words, how many the verbs, etc. Then it would have to be determined whether psycho-physiological causes alone would or would not account for the forgetting in all as well as in particular instances. Only after all this was done and the forgetting could not be explained on known and proved psychological principles, would we be justified in resorting to an unproved and hypothetical assumption. Professor Freud has made no such study and therefore his "analysis" of the forgetting of the word "aliquis" in one particular instance has absolutely no scientific value. In this connection I may mention that not a single scholar to whom I spoke of the "familiar verse" under consideration was able to recall it correctly. And surely no one, except perhaps Professor Freud, expects to be able to recall all the Latin verses, even such "familiar" ones as "Exoriare," etc., that he had learned in his student days. And it would require a great deal more evidence than has yet been offered us to make us believe that all these instances of the forgetting of the verses are "complex"-determined.

12. Another matter that should have been determined by Professor Freud before he drew his conclusion about "a second mechanism of forgetting" is the question whether he would not have elicited the same facts if the young man had happened to forget some other word, *e. g.*, "exoriare," in the sentence, instead of the word "aliquis," or had forgotten to tie his cravat or lace his shoes. Had the young man that morning really been worried about his friend's menses we would have no hesitation in saying that sooner or later he would have spoken of that subject in associating to any word in the given sentence, or in any other sentence, or to his untied cravat. This would completely disprove the supposition that the forgetting of the word "aliquis" was "complex"-determined.

13. The fact that after several minutes' talk, consisting of free

associations and answers to suggestive questioning, the young man spoke of a subject of a private and personal nature, *i. e.*, a woman's menses, does not prove that there was a causal relationship between the forgetting of the word which was the starting point for the colloquy and the presence in the young man's mind of a latent worry about that woman's menstrual period. We must remember in this connection that the gentleman had *not* worried about the matter, and that he said only that he *could* get a message that would be unpleasant. But even if he had been anxious about the matter, that would not prove that there was a causal relationship between that worry ("anxious expectation") and the forgetting of the word "aliquis."

14. In his commentary on the analysis, Professor Freud says that the young man had "expressed a wish for posterity." But he had really not done so; he had only implied a wish that in the future some one might arise who would avenge the wrongs of the Jews. This has nothing to do with his own posterity. And incidentally, but by no means irrelevantly, it may be pointed out that in such a situation as that we are now dealing with the young man would be sure to say "progeny" not "posterity," if he were thinking of his own offspring. It remains yet to be shown that the wordless Unconscious identifies "posterity" with "progeny."

15. Continuing his commentary, Professor Freud says that "at that moment a contradictory thought introduced itself" into the young man's mind. As we have heard nothing of this "contradictory thought" from the young man himself, we must infer that Professor Freud assumes that the "thought" of which he speaks ("Do you really earnestly wish for posterity? That is not true. In what a predicament you would be if you were now to receive information that you may expect posterity from a certain quarter which you have in mind! No, no posterity!") and which inhibited the recollection of the word "aliquis" was unconscious. But we have been taught that the Freudian Unconscious consists of repressed, forbidden desires, of conative trends, of speechless urges, yearnings, cravings. Surely, the unconscious thought which Professor Freud attributes to the traveling academician cannot be described as an urge, a longing, and much less as a repressed desire. Thoughts and impulses (cravings, yearnings) are not identical phenomena, and one cannot be substituted for the other. If the subject had those thoughts (not "that thought") he was conscious of them as such, and if he was not conscious of them they were not the unconscious determinants of the forgetting. Uncon-

scious thinking is an oxymoron which is made impossible by Professor Freud's own definition of the wish-character of his "Unconscious."

16. Why, it may be asked, did Professor Freud stop his investigation when they came to the matter of the possible gestation? What reason had he for concluding that the search was finished? Why didn't he ask the gentleman to continue his "free associations"? Surely the possibly suppressed menses were not the only unpleasant subject that might have occurred to the young man's mind if the investigator had continued to quiz him long enough. In fact, it is more than likely that very unpleasant thoughts which had actually occurred (not that "could" have occurred) to him might have been elicited without any very great difficulty. Professor Freud's procedure leaves no room for doubt that he stopped his "investigation" when he found something that seemed to coincide with what was in him a foregone conclusion, namely, that something of a sexual and painful nature lies behind every forgetting. That this is so is corroborated by his statement that "every similar case that you will analyse will lead you to just such remarkable 'coincidences.' " Needless to say, it explains the unscientific technique pursued by Professor Freud throughout his "investigation"; his bias and his "hope to get an addition to his collection" ruined what in the hands of a more careful scientist might have been an important experiment.

17. Owing to the extrinsic associations between the word "aliquis" and one of the elements of the (conjectured) objectionable wish, this insignificant word was repressed so intensely that it could not be recalled. That is what Professor Freud would have us believe. The forgetting saved the young man from the pain which he might have felt as a result of the unconscious associations emanating from the presence in consciousness of the in itself harmless word "aliquis." To us this theory seems to be sufficiently disproved by the fact that the intrapsychic censor, so solicitous about the young man's feelings, did not interfere with his recollection — under Professor Freud's guidance — of the much more direct and significant allusions to blood, the months of the year, St. Simon, etc. If these things so readily recurred to the gentleman's mind, surely the word "aliquis" should have been passed by the censor.

18. One of the most serious errors committed by Professor Freud in the above analysis was his omission to get his companion's free associations to the English word "liquidation." Needless to say, the young man may have known, and probably did know, that "liquida-

tion" and "liquefaction" are not synonymous terms. And we, therefore, have here a word — the third in his associations — which has no reference to the assumed "complex," switches away from what we are asked to regard as a "complex-indicator," viz., the word "reliques," and leads back again to another "indicator" ("fluidity"). Why this happens is nowhere explained, nor is the fact itself pointed out or commented on.

Had the gentleman been invited to associate to "liquidation" we might have obtained some very interesting, and perhaps painful, data about his financial affairs, about difficulties in meeting his bills, about the importance of money to the Jews (and this would connect up with the conversation which led up to the lapse), etc. In this way, no doubt, important matters might have been elicited, perhaps not of a sexual nature, which had actually engaged the young man's conscious attention that morning. And in that case it would be left to us to decide whether these ideas or the possible worry about a woman determined or influenced his forgetting the word "aliquis."

It is not impossible either that had he been encouraged to continue his free associations to "liquidation," "fluid" and "fluidity" we might have elicited the recollection of enuresis nocturna, and then we should have been in no doubt as to the reason for his forgetting the innocent "aliquis." This would be strictly in accordance with Professor Freud's theory that behind ambition (Note the opening conversation!) we often, if not always, find unconscious memories of enuresis in childhood. Note, in this connection, these associations: a liquid, a relic of childhood, Simon (infants all wet their beds), Kleinpaul (the little Paul, *i. e.*, membrum virile), stream (!) of thoughts, women (girls probably suffer from enuresis more than boys), etc.

One would have thought, too, that before Professor Freud had reached the conclusion that the possibility of hearing of the non-occurrence of a certain woman's menses could cause a young Jew who had once studied Latin and some English to forget the commonplace word "aliquis" in a verse in Virgil's *Æneid*, that he would at least have inquired whether the gentleman in question had been able to recall that verse correctly a month or more prior to the reported conversation. But that seems not to have occurred to Professor Freud. And yet we all know that we sometimes forget words, names, quotations, etc., which at other times we can recall with ease. In the present instance this fact would, obviously have been of the utmost importance; if the young Jew could not have recalled the verse cor-

rectly prior to his liaison there would be nothing surprising in his present lapse of memory and we would not be expected to believe that this lapse was due to a possible concern about possible progeny. In the absence of any information along this line, the analysis of the forgetting of "aliquis" loses any possible value as a scientific experiment that it might possibly otherwise have had.

Inasmuch as Professor Bleuler, notwithstanding his repudiation of the bulk of Freud's teachings, defends the analysis of the forgotten "aliquis," we shall briefly examine some of his statements and arguments ("Jahrbuch f. psychoanalytische u. psychopathologische Forschungen," 1910, vol. 2, pp. 648–654).

He says that according to Freud the word "aliquis" "reminded" the gentleman's Unconscious of the absence of an anxiously anticipated menstruation. This statement is erroneous in the following respects: The Unconscious does not remember or reason or know or think, — it only wishes and wishes in symbolic or pictorial form; hence the word could not have "reminded" the Unconscious of anything. Then, too, the gentleman did not know that the menses had not appeared, and we have no evidence anywhere that the man was worried about the matter; he said only that he "could" get news that would be unpleasant.

Professor Bleuler thinks that the forgetting of "such an ordinary word as 'aliquis' is extraordinary and needs special explanation." This is not true; besides, he begs the question. If anything, an ordinary word in a foreign tongue ought, according to all known and accepted psychological principles, to be more readily forgotten than an uncommon word. The law of associations applies. Besides, if the young man did not know the exact meaning of the verse in question and the force of the bivalent word "aliquis," we would have a sufficient explanation for his inability to recall it.

Very few Latinists, says Bleuler, would have divided the word "aliquis" into "a" and "liquis," inasmuch as this word has nothing to do with the root of the word "liquidus." But there is absolutely nothing in Professor Freud's narrative to warrant the assumption that the young man was a Latinist. The ability dimly to recall a Latin verse from one's student days does not make one a Latinist. And it remains to be shown that the gentleman in question knew enough Latin to know the etymology of the word "aliquis." We have known fairly good Latin students who didn't know that. It does not, then, follow that there was a complex-determined preparedness in the

gentleman's mind for the incorrect division of the word "aliquis." And, furthermore, we have no means of knowing whether he even knew the correct scansion of the verse he intended to quote (He misplaced some of the words!) or on what syllable to put the main stress in the forgotten word. If he read the word "aliquis" in this verse with the stress on the first *i* (a-li-quis) we would think it quite natural for him to begin by dividing it into "a" and "liquis."

Bleuler asserts that it was extremely unlikely for the subject accidentally to divide the word "aliquis" as he did inasmuch as he showed no special tendency to "sound associations." But in this Professor Freud's champion is in error, for, as a matter of fact, the young man went on to associate "reliques" and "liquidation" to *liquis*.

The other points raised by Professor Bleuler do not call for special attention as they have practically all been dealt with in our comments on Professor Freud's analysis. But before we dismiss the subject we venture to raise a theoretical question: if a possible concern about the possible non-occurrence of a woman's menses could cause the forgetting of a word so remotely and indirectly related to this phenomenon as the word "aliquis" is, why did it not rather cause the forgetting of the word "exoriare" (exorcism, expulsion, abortion) which can be so much more directly linked up with the presumedly apprehended gestation?

Summing it all up, we may say that Professor Freud has not proved or even shown it to be probable that the forgetting of the word "aliquis" was complex-determined, that the Unconscious had anything to do with it, or that there was any relationship between the forgetting and the matters he elicited by his questions and suggestions.

EXHIBITIONISM

BY STEVENSON SMITH AND EDWIN GUTHRIE

UNIVERSITY OF WASHINGTON

ACCORDING to Freudian theory, original human nature includes an instinctive tendency to exhibitionism which, in its primary form, displays itself in acts of immodest exposure, and which has various derivative forms, such as demanding attention in the presence of others, being noisy and silly when strangers are about, and showing excitement when under observation. The original stimulus for this instinctive removal of clothing and unadorned parading is not described, but the implication is that it is the sight of other people.

An examination of this thesis, that all ways of making one's self conspicuous are modifications of an instinctive tendency to sexually immodest acts, will show two points of serious weakness. In the first place, it is only necessary to examine the development of any exhibitionary act to discover that it is learned. In the second place, it seems possible to demonstrate that many forms of exhibitionism are for the most part the result of non-sexual mechanisms. If these propositions can be demonstrated, exhibitionism is shown to be neither instinctive nor necessarily derived from sex behavior.

Our present knowledge of the acquiring of habits by infants makes it possible to explain how exhibitionism may be developed through learning. Even emotional reactions to visual stimuli are possible only as conditioned responses, and are never the instinctive result of what the baby sees. Watson has shown how a baby develops a conditioned fear response. Fear may be produced by the sight of an animal, provided the baby has first been frightened by a sound stimulus while looking at the animal.

It is probable that any emotional response may come to be conditioned in the same way upon visual stimuli. The preference of children for noisy toys is attributable to the fact that noise arouses emotion and secures attention. For the same reason children pay more attention to human beings than to inanimate objects. Human beings, because they move about, converse, and interfere with the baby, are more likely to stimulate the baby's emotions. Hampering the baby's movements is an original stimulus to rage, and such a stimulus usually occurs when human beings are present and are looking

at the baby. Thus excitement becomes conditioned on the situation of *being looked at*. Sex excitement is aroused by the stimulation of erogenous zones, and the baby usually receives this stimulation at the hands of others, and usually when without clothing. Thus the sight of others, or the removal of clothing, may become the substituted stimulus for sex excitement. Children are excited in the presence of others because the sight of people is the most frequent accompaniment of those original stimuli that produce emotion. This excitement reinforces learning, so that responses aroused by and directed toward people come to have very low thresholds.

When a habit is firmly established and an occasion arises when the successive stimuli upon which its performance depends are not all present, there is a marked emotional disturbance. Most habitual responses of children to other people depend upon being looked at, spoken to, and played with. When the attention of others is withdrawn, the child's habits are disrupted and he is emotionally wrought up, just as a man fumbles with his hat, increases his pace, and behaves queerly when his greeting to an acquaintance goes unnoticed. The boisterous or silly acts of the unnoticed child are compromise responses. The adult who is present, but not attentive, starts habits going in the child which can not be completed without the adult's co-operation. Under these circumstances children perform many acts that might be called random, but that are in the nature of compromise responses depending upon the unusual array of stimuli and upon the emotion resulting from the blocking of habitual modes of behavior. Finally the children do something annoying, amusing, embarassing, or otherwise striking, and the people present give attention.

Many of these attention-securing acts of children are what we call exhibitionism, and these acts become fixed as habitual responses to people who are not paying attention, just as the successful responses of the cat in the puzzle-box become attached to the stimulus of the door-opening device. By trial and error every child hits upon the acts that secure him attention. Swearing is such an attention-securing act, and for this reason swearing is readily learned by children. No word is called profane that does not shock the hearer. If Freud had been less interested in sex, the prevalence of blasphemy might well have led him to enumerate it among the instincts, notwithstanding its diverse expression in many languages. This would be hardly less absurd than to regard the particular forms of immodesty determined by various folkways as an instinctive mechanism.

The nature of exhibitionary behavior depends less upon the instinctive endowment of the child than upon the situations to which adults have learned to give attention. The likelihood that a child will develop immodest habits is proportional to the favorable attention which his immodesty secures for him. It is significant that deliberate immodesty among children occurs oftenest in the presence of strangers. This is in part because under such conditions parents are preoccupied. Being noisy, saying "watch me," pulling the abstracted person's coat tails, and immodest acts, are all developed in the same way. While the child watches the averted faces of those present his acts which do not secure him attention are finally abandoned, because they bring stimuli to bear which lead him to do something else. If he repeatedly asks a question and is persistently disregarded, this may lead to rage or grief, or some part of the situation may engage his attention so that in becoming interested in something else he ceases his questioning, and negative adaptation of the questioning results. If, on the other hand, the question is answered, the face of the person who answers ceases to be averted and negative adaptation of the act of questioning does not occur.

Many of the exhibitionary traits that children develop through trial and error are not of a sexual character. The fact that all children exhibit modesty and its correlate, immodesty, is certainly in part the result of the almost universal response of adults to those chance acts of children which offend their acquired notions of decency. Many of these chance acts are not sexual in origin. All that is needed for children in general to develop the same habits is that they be exposed to the same situations. A child, may, without intention, commit acts which strike all sophisticated adults as being indelicate long before he has come to perceive these acts as sexual, just as a foreigner may transgress the customs of the country and so unwittingly attract attention to himself. Most acts of immodesty result in being confronted with a shocked and therefore attentive observer. This exposes all children to a social control that is the result of the sex education of adults. The uniformity of manner in which immodesty is shown by children would seem to be the result of their sharing a common environment rather than the result of their being endowed with immodest tendencies. This behavior later acquires for them its sexual significance by association with primary sex situations.

Exhibitionism is probably then not an instinct. Neither is it always derived from sex behavior. Anger is as likely as love to be its

emotional reinforcement. Exhibitionary acts are learned through trial and error responses to the situations in which children are placed and the striking likenesses in the exhibitionism of children the world over have as their cause similarities in culture and the commonality of human nature. Their equally striking differences are due to differences in culture and to the idiosyncrasies of situation confronting every one.

FURTHER DATA CONCERNING SEX DIFFERENCES

BY HENRY T. MOORE

DARTMOUTH COLLEGE

THE mental test seems to have said its utmost on the subject of sex differences, and the results have been on the whole surprisingly at variance with the insistent prejudices of the average man and woman.

When common sense and science clash it is more often science that has the last word, but not always. Occasionally the worm turns, and a supposedly scientific doctrine unacceptable to common sense continues to be scrutinized until a glaring flaw is discovered either in the method or the interpretation of results that led to the doctrine. The history of medicine is strewn with the wrecks of such doctrines, and psychology bids fair to number at least its fair share of derelict "scientific" notions.

For example, test comparisons seem to have revealed negligible differences of performance under conditions of good and bad ventilation; after a good night's rest and after a three night vigil; with and without distraction of attention. To common sense this only proves the inadequacy of any competitive test to set forth the differences that are normally to be expected as the result of such environmental variations. And common sense rightly insists on an interpretation of these results in keeping with its assumption that unfavorable environmental conditions do make a very considerable difference in a subject's mental efficiency for all practical purposes.

Very much the same may be said of the small differences apparent in the test scores of men and women. So far as these results suggest the interpretation that the mental differences between the two sexes are after all comparatively insignificant, they suggest something that common sense and universal experience refuse to allow. Such results again promise to stand as the mark of the inadequacy of the psychological test to get at the most important features of mental differentiation.

Actual mental achievement will always depend more on one's interests and enthusiasms than on one's downright native capacity. It is the emotional bias that compels one man to continue thinking constantly about his inventions while other equally facile minds are ready to call eight hours a day. Even if we accept Woodworth's

doctrine that every mechanism may become a drive, and subscribe to the present critical attitude toward instinct as a principle of explanation of differences in behavior, we are nevertheless forced to admit that an environmental account of striking differences in the "drives" of men and women is hard to maintain in the face of the remarkable duplication to be found in the present education of men and women in grade school, high school, and college. Both the curricular and the extra-curricular activities of the two sexes have become cast in the same mould, and their social recreation has become stereotyped into the same round of movies, bridge and dancing. Under these conditions any wide differences of interest must stand as being to a great degree an expression of difference of natural emotional aptitude, of an unyielding innate divergence that predetermines the enthusiasms that are to be expected from the two sexes in identically the same environment.

The earlier simple word association tests have already given a hint as to the possible extent of such differences. Jastrow[1] at Wisconsin found that women's word associations contain references to wearing apparel and interior furnishings twice as often as do men's. On the other hand men's associations contain about fifty per cent more verbs and references to occupations, and about forty per cent more references to implements and utensils. Miss Manchester at California[2] found results roughly in agreement with those of Jastrow. But mere word associations are necessarily limited by such chance mechanical factors as recency and frequency. Moreover, the subject is never free from the special mental set prescribed by the instructions as he understands them in such a test, and it is impossible to say just how far the inhibitions incident to a test-taking attitude render the results an unnatural expression of the subject's thought-content.

The presence of strong personal interests is nowhere more apparent than in the natural trend of easy conversation, when the topics seem to be flowing of themselves. This seems to be especially true at the end of the day, when the mind is comparatively free from the preoccupation of immediate tasks at hand. Under these circumstances what does the spontaneous choice of topics lead women to talk about, and how does their list of topics compare with that of men?

To secure an exact comparison of masculine and feminine leitmotifs in conversation the writer made a practice for several weeks of walking

[1] J. Jastrow, Community of Ideas of Men and Women. Psych. Rev. III, 1896, 68–71; 430–1.

[2] Genevieve S. Manchester, Experiments on the unreflective Ideas of Men and Women. Psych. Rev. XII. 1905, 50-66.

slowly up Broadway from Thirty-third Street to Fifty-fifth Street at about seven-thirty every evening. Every bit of audible conversation was jotted down. On account of the various street noises and interruptions it was exceedingly hard to listen in for more than a few seconds on any one conversation without very apparent efforts at eavesdropping, and six fragments were an average evening's collection. In all one hundred and seventy-four fragments were jotted down, and later listed by topics and classified according to whether the speaker was a man or woman, and whether the company was mixed or of the same sex. There were eighty instances in which a man was talking to another man or men; thirty in which a woman was talking to another woman or women; thirty-two in which a man was the speaker in a mixed group, and thirty-two in which a woman was the speaker in a mixed group.

The following table states in percentages the relative frequency of five topics in each of the four types of social group.

	Man to Man	Woman to Woman	Man to Woman	Woman to Man
1. Money and business	48%	3%	22%	12%
2. Amusement	14	4	25	10
3. Persons of same sex	13	16	13	13
4. Clothes, buildings, interior decoration	2	23	3	17
5. Persons of opposite sex	8	44	10	22

It will be seen from the above results that the preoccupation which dominates one half of man's conversation influences but three per cent of woman's, whereas the theme of nearly one half of woman's conversation finds its place in less than one twelfth of male discussion. Further, woman's second most important topic, affording twenty-three per cent of her conversation, furnishes man but two per cent. Men, home and clothes supply the natural drive for sixty-seven per cent of woman's thoughts. Similar motives in man are accountable for only ten per cent of his topics. As against this, sixty-two per cent of man's drive seems to originate in money, business, and amusement, motives which get altogether only seven per cent of woman's spontaneous consideration.

The conversation of mixed groups, with a few significant exceptions, tells practically the same story. Adaptations are made on both sides, and in this woman excels, for she quadruples her interest in money while talking to men, while man's largest adaptation consists in doubling his interest in amusement while talking to woman.

The following are typical instances of the two main topics of each sex.

MAN'S PREDOMINANT TOPIC

FORTY-EIGHT PER CENT FREQUENCY

"That made $1,000 for February."
"He'd lease it to you for a year."
"I sold it for three times what I paid for it."
"We've been firing employees and then taking them back."
"I'll save money out of it."
"Pay your own, pay your own."
"He's making good money."
"It'll set you $5,000."
". . . and use him accordingly. Why, if a man wants to make a dollar . . ."
"I can buy it in the market, in the market."
"It is at least $10 or $15."
"Say you make $100,000, $50,000, $25,000 at that kind of speculating . . ."
"I had only five and a half bucks when I hit town."
"You mean he wouldn't sell it?"
"He's insolvent, this is no place for him."

WOMAN'S PREDOMINANT TOPIC

FORTY-FOUR PER CENT FREQUENCY

"She was just as glad to see him as he was to see her."
"He left for Canada Saturday."
"Sure, I spoke to him."
"She says, 'when did you get in town?', and he says, 'today, and I've got to leave right away.' "
"They were all enlisted men."
"Even if I wasn't married, and I never expected to see him again."
"He had the very same expression."
"And I said, 'boy, you know!' "
"What's the use talking to that man?"
"And so he was to come."
"Then I saw the other fellow."
". . . always with the good old smile. I'd like to see him look worried."
"But the other fellow wouldn't salute."
"So I said to him."
"He was in town for a visit of three days."

MAN'S SECOND TOPIC

FOURTEEN PER CENT FREQUENCY

"It was an old-fashioned roadster, with the . . ."
"I can't sit through that kind of thing."
"That's the best cigar I ever smoked."
"He didn't buy forty cents worth of drinks."
"Charlie Chaplin's playing at the next one."
"They came home the next morning, half lit."

WOMAN'S SECOND TOPIC

TWENTY-THREE PER CENT FREQUENCY

"She's having a suit made, a swell one."
"Do you remember the full blue skirt I had last year?"
". . . to wear the hat . . . how to get myself together."
"I think I'll buy three pairs of silk stockings."
"I wish I had the nerve to wear it; I love that color."
"It will certainly be pretty when they get all the decorations."

After making every possible allowance for differences in convention and personal experience, it is hard to escape the conviction that the original nature here depicted is of two fundamentally different sorts, and that the two types could hardly be permanently adapted to identical interests. To be sure, it may be contended that Broadway is not to be taken as a representative cross-section of the country; and this is a happy consideration on many accounts, for one of the unhappy revelations of the material collected was the scarcity of anything resembling serious discussion of general topics. The somewhat intentional levity of the Great White Way necessarily exempts it as an adequate criterion of what America habitually thinks about. But granting that both men and women are in a mildly ecstatic state of light-heartedness, why should the esctasy of women run to men, clothes, and decoration, while that of men runs to money, business, and amusement? One cannot but believe that if further samplings were taken under a great variety of conditions, the outstanding facts would be the same. Certainly the conclusion from this tentative random selection of fragments of conversation is that there are very considerable and ineradicable differences in the original capacities of the two sexes for certain types of enthusiasm, and this difference must of necessity set an ultimate limit to woman's success in assimilating male spheres of interest, regardless of the apparent equality of capacity often indicated by mental tests.

THE PROBLEM OF RACIAL PSYCHOLOGY

BY THOMAS R. GARTH

UNIVERSITY OF TEXAS

ACCORDING to Woodworth,[1] the problem of racial psychology is to find quantitative differences in mental traits between races since there cannot be any real qualitative differences. At least we cannot think of memory in one race as being different in quality from memory in another race, nor can we think of a qualitative difference in imagination among human beings. It is just imagination, human process. We find a more poetic, though perhaps less cogent, statement of this common similarity among peoples in a larger sense in the words of Hiamovi, Chief among the Cheyennes and Dakotas: "There are birds of many colors — red, blue, green, yellow — yet all one bird. There are horses of many colors — brown, black, yellow, white — yet all one horse. So cattle; so all living things — animals, flowers, trees. So men: in this land where once were only Indians are now men of every color — white, black, yellow, red — yet all one people."[2] But if there are no real measurable differences[3],[4] we are compelled to think of similarities which would bring us to the alternative that there is only one racial mind, just human mind.

The experimentalist in race psychology brings from the psychological laboratory certain methods of procedure. In the first place he must measure the process to be studied; secondly he must maintain standard conditions; and, finally, he must interpret his findings. Such a problem then demands two so-called races, R_1 and R_2. It next demands a device for measuring, D. The results of the two sets of measurements, R_1D and R_2D when brought into comparison would indicate the differences if there are any. This then would seem to be the problem of racial psychology. If the method of solving the problem were as easy as the statement of it, all would be well, but this, like most methods of solution of straightforward problems, breaks up into a lot of subsidiary problems. Thorndike says: "The facts are measurements of differences between groups which are distinct to an unknown degree in traits which are influenced by training to an unknown degree."

Being a psychological problem and also biological, the facts of variability enter in the first place before we have gotten a fair start

in the process of measurement, hence the experimentalist in race psychology must ask of the geneticists and the anthropologist this question: "Are the individuals of the group being measured fair samplings of the race to be measured?"

From another standpoint the question is a psychological one pure and simple. Psychology recognizes two classes of behavior, native and acquired. The first is a matter of germplasm; the second, a matter of nurture. Unfortunately innate behavior changes with environment and experience so that it "masquerades"[4] as learned behavior. In consequence, in adult life we do not find any pure instincts because the "native patterns" and "orders"[5] have been modified by experience.

In the writer's opinion these two factors, selection of individuals to be tested, and the mechanism of modification, are causing the difficulty in race psychological work. They are always troublesome but peculiarly so here.

Being a question of innate tendency, it is, as we have said, a question of germplasm. Geneticists have taught us to conceive of germplasm as a thing independent of disease and circumstance, at least theoretically, and that it is capable of producing mutations and of recombination; that it flows on down the course of time always resident in individual carriers. Being in a state of flux, it sometimes produces this form and sometimes that. At times these combinations serve to raise the individuals forming the group, and at other times they are such as to lower the group; but these states are only temporary, mere incidents in the life history of the germplasm. The horses of the Western plains of America are neglected breeds of a once proud lineage which might be reclaimed by eliminating the unfit in the breeding process. As it is now, certain individuals with some eye to business make a practice of catching them in the wild state and turning them over to civilization for a very small profit per head. This to show to what degradation the breed has fallen. But it is to be noted that circumstances have permitted germplasm to produce such patterns as have been found on the plains among both cattle and horses.

No doubt races of men are susceptible to the consequences of adventitious breeding just as are cattle and horses, for at times the unfit germplasm may predominate because of circumstances favorable to them. If today we could measure Greek intelligence we might not think much of it, but if we had measured it 3,000 years ago the

norm might have been different; on the other hand, if we had measured Anglo-Saxons in Aristotle's time, the norm would probably have been rather low on the scale. If the god of war should call forth to slaughter all the mentally fit of the white race today, the norm of the survivors would be low — unless the women of this type should survive and serve to transmit their share of superior germplasm. An examination of McDougall's latest book, "Is America Safe for Democracy?" brings to us this statement: "Selection. It is of the very essence of civilization that, as it progresses, it abolishes more and more completely the operation of the various forms of natural selection which in primitive peoples undoubtedly tend to maintain and promote racial qualities. And in our modern western nations, medical science, charitable organization, and protective legislation have pretty well achieved the abolition of natural selection."[7]

Moreover, being a question of behavior, the factors of modification must be controlled when we experiment in race psychology; not because we wish to study the modifications per se, but the effects of germplasm on modification and vice versa. It is more than likely that the mechanism of the conditioned reflex will serve to distort a behavior so that its possible racially natavistic pattern will not be recognizable. On the other hand, an artificial pattern might become so universal that it could easily be taken for innate behavior in the race. Again, we can see that learning might languish by the way because of lack of a drive, for trial-and-error never flourishes excepting in the domain of necessity, the mother of invention. Consequently possibilities of mental sorts would never be realized because the individual has never been goaded on by necessity. Higher orders of habits would never be built up, even if they were possible; and if these have neurological counterparts, neural areas would lie fallow. All this for want of necessity, essential for that modification of behavior called learning, especially of higher sorts. Learning of various sorts brings about methods which may be carried from one sort of learning to another. These latter are products of modification but are found only in those individuals who have the various sorts of learning out of which the methods spring and which possess the roots of these methods. Only those individuals possessing the learning can possess the methods, and if they do not possess the learning experience they cannot be expected to possess the method. In fact, one does not know what can be done by such an individual until he has had the opportunity of acquiring the process basal to those still

higher processes called methods. While of course it is a sort of higher order "habit," still "method" may well be singled out as peculiar because of its seeming intangibility. Nevertheless experimentalists are confident of having found it in the psychological laboratory. We do not mean to imply that all individuals of the civilized races possess these higher methods to a generous degree, for they are not traits of any one race, just as feeblemindedness is not; but we may expect to find them where opportunity has been given for their acquisition, in a civilized society.

Another factor of modification is interference of one sort of learning with another. By way of illustration, in the same individual one race practice, well established to begin with, will undoubtedly interfere with the learning of another and different race practice if the individual endeavors to learn the latter, especially if the two run at cross-purposes. It is just possible that the "last state" of that man would be worse than "the first" in some instances. Little also is known of the real nature of affection, or feeling, however it functions in modification of behavior. One race cannot account always for the affective reactions observed in another, and tolerance is necessary on the part of both. But just these differences may account for some "racial differences" in behavior.

On the whole, the question of the intelligence of one race as compared with that of another must be settled in the light of the facts of a dynamic psychology such as is held today, some of whose principles we have just enumerated.[8] We may not just measure two races and say we have found these differences, ignoring the fact that the differences may be caused by some mechanism of modification; nor may we ignore that the group of individuals may not be representative of the race supposed to be measured.

Another important phase of the experiment is the technique of its administration, which would include placing the subject at his ease. It is just possible that white children have an advantage over Indians and negroes in this respect with a white experimenter administering the psychological test, whether it be an individual or a group test. Some conditions cannot be perfectly controlled. This loophole, however, should be most carefully guarded.

Though for a long time work in the field of race psychology seemed unprofitable, activity in mental testing has caused an encouraging revival of interest in this field. No one knows where it will lead. It is barely possible that the psychological and sociological by-products

of such industry may prove as valuable as the direct results obtained. This has been true in other fields of psychological work, as for instance, that of comparative psychology in seeking the beginnings of consciousness. Romanes may have been following an endless trail in his search for these beginnings; and his question as to whether it is "the Angel that descends to trouble the waters, or the troubling of the waters that calls down the Angel" has never been satisfactorily answered for many individuals. If it should seem that our tests do not indicate real racial differences at first blush, the results afford material on which we may base further investigations. At least we shall have data and we shall know how we obtained the data; and if this is well done we can say the analysis of the problem has been started.

BIBLIOGRAPHY OF REFERENCES

1. Woodworth, R. S., Racial Differences in Mental Traits, *Science*, 1910, N. S. 31, 171–186.
2. Curtis, Natalie, The Indians' Book, foreword.
3. Thorndike, E. L., Educational Psychology, Vol. III, 169–205.
4. ——— Educational Psychology, Vol. III, 220–224.
5. Woodworth, R. S., Psychology, 1921, 137.
6. Watson, J. B., Behavior, An Introduction to Comparative Psychology, 184–186.
7. McDougall, Wm., Is America Safe for Democracy? 1921, 149.
8. Woodworth, R. S., Dynamic Psychology, 34–43.
9. Wientrob, J., The Influence of Environment on Mental Ability, *The Journal of Educational Psychology*, 1912, 577–586.
10. Arlitt, Ada Hart, On the Need for Caution in Establishing Race Norms, *Journal of Applied Psychology*, 1921, 179–183.
11. Ayres, C. E., Instinct and Capacity II, *The Journal of Philosophy*, 1921, 600–615.

A Young Girl's Diary. Prefaced with a Letter by Sigmund Freud. Translated by Eden and Cedar Paul. New York. Thomas Seltzer, 1921. Pp. 284.

A large sale is evidently expected for this unique and extremely interesting volume for its shelf-jacket bears the now familiar legend,

"This book is intended for parents, educators, and members of the medical and legal professions only."

And there are certainly multitudes of these classes of our population, as there are too of those who might become parents or educators or lawyers or physicians. Thousands of more or less similar diaries, still in MS., are in existence in the United States, without a doubt, in the "strong-boxes" more or less strong, of young women and of women who "love" to think they have been young. But not since "The Young Visiters" departed has the budding feminine soul been so widely revealed.

Of course the puissant Sigmund Freud of Vienna is wholly right (can he indeed do wrong?) when he writes in his letter quoted as part of the preface:

"This diary is a gem. Never before, I believe, has anything been written enabling us to see so clearly into the soul of a young girl during the years of puberal development. . . . Above all, we are shown how the mystery of the sexual life first presses itself vaguely on the attention, and then takes entire possession of the growing intelligence, so that the child suffers under the load of secret knowledge, but gradually becomes enabled to shoulder the burden. Of all these things we have a description at once so charming, so serious, and so artless, that it cannot fail to be of supreme interest to educationists and psychologists." It cannot indeed.

The diary covers the years between eleven and half-after-fourteen, and any young woman would tell a sceptic that it is certainly authentic, — indeed would be apt to point out striking similarities to diaries which she has seen, written nearer home than Wien. The volume will serve a useful purpose in reminding many a man and woman what adolescence meant to them in the evolution of their sexual life, things so familiar to them now that they seem always to have been known. This reminding in some cases will lead them to help their growing sons and daughters more easily over the "horrid" yet always enticing obstacles on the road to a personality really appreciative of the marvel of love. For love is, as De Morgan calls it, "the mystery of all mysteries," and to multitudes a very sacrament. But so many as yet have not attained to this deeper insight! George Van Ness Dearborn.

The Glands Regulating Personality. By Louis Berman, M. D., Associate in Biological Chemistry, Columbia University. New York. Macmillan, 1921. Pp. 291. Price, $3.50.

Psychologists and physiologists alike have recently placed much emphasis

upon the glands of internal secretion as determinants of behavior. Their claims have become broader and broader. At first it was only the emotional and affective life of the individual that was considered to be, in part, a function of the action of the hormones; then the theory of glandular determinants of racial and sex differences attained general recognition: and more recently the foundations of temperament and character have been identified with the innate individual differences of the action of the endocrines. Doctor Berman's book is a statement of the extreme position held by those who have been dazzled by the possibility of a glandular explanation for all the forces underlying behavior. "Man," says the author, "is the creature of his glands of internal secretion. . . . The incontestable evidence, that first pointed to, and then proved up to the hilt, this answer to the question: What is Man? has been gathered in less than the last fifty years." The statement that man is the creature of his glands of internal secretion may be considered the author's major premise. If this characterization of man is just, and if we accept the obvious fact that physiology has progressed a long way in the explanation of mechanisms of hormone functioning, then we may readily admit the conclusion that with a few additional revelations from the endocrinologists the riddles of personality will be solved once and for all! With such reasoning the author's optimism is not to be wondered at: "We may now look forward to a real future for mankind because we have before us the beginnings of a chemistry of human nature. The internal secretions . . . have been discovered the real governors and arbiters of instincts and dispositions, emotions and reactions, characters and temperaments, good and bad."

The author unfortunately does not see fit to offer the experimental evidence to support his contention that the internal secretions have been discovered to be the governors of behavior. The reader is left unsatisfied as to proof for the marvellous alleged properties of "the interlocking directorate of glands." He is told, e. g., that the post-pituitary regulates the maternal instinct, that the anti-pituitary and the gonads influence the evolution of judgment, that imagination is the product of balanced activity of the ante-pituitary and post-pituitary, and that memory is a function of the thyroid secretion. If there be evidence on hand to support these striking assertions surely it is well worth the publishing. The critical reader is lost in a confusion of fact and fancy, and in trying to separate the justified from the unjustified conclusions finds himself necessarily in a defensive attitude.

The author brings physiognomy up to date and gives it a new lease on life. Dominating glands within an individual are considered to be the basis for qualities of both physique and character. It follows that if we would analyze our fellow man with regard to his personal capacities we have only to refer to certain characteristic features of the body to receive an unmistakable index of character. The principal personality types which may be recog-

nized by the endocrine criteria are the adrenal centered, the thyroid centered, the thymus centered, the pituitary centered, the gonad centered, and their combinations. The professional physiognomist is wont to give sample readings of famous figures to prove his scheme. Without doubt the book under present consideration is superior to popular character analysis, and yet the reader is struck with the author's use of the same device for support of his contentions. Towards the end of the book we find that Oscar Wilde, Charles Darwin, Napoleon, and Florence Nightingale are all neatly pigeon-holed according to the peculiarities of their glands of internal secretion and the correlative traits of character. We must object that to attempt an endocrine analysis of geniuses long since dead is, to say the least, — presumptuous.

The author's view on mechanism in the universe, as stated in the introduction, while rather irrelevant to the main interest, is decidedly good reading. There follows a valuable chapter on the history of Endocrinology. The remainder of the book, as has been pointed out, is concerned with assertions which seem for the most part to exceed the warrant of present physiological knowledge. It may be that we are dealing with a book of prophecy if not of experimental fact; the future may demonstrate the man as indeed nothing more than "a creature of his glands of internal secretion." The prophecies as well as the conclusions, however, seem to be too generously assumed; the pendulum seems to have swung too far. When physiology has made the last of its contributions to the study of human behavior — and the list of its contributions will be a long one — even then psychologist may find that he need not surrender the problem of human personality entirely to the endocrinologist.

GORDON W. ALLPORT.

HUMAN NATURE AND CONDUCT. By John Dewey. Henry Holt and Company, New York, 1922. Pp. vii + 336.

"The book does not purport to be a treatment of social psychology. But it seriously sets forth a belief that an understanding of habit and of different types of habit is the key to social psychology, while the operation of impulse and intelligence gives the key to individualized mental activity. . . . Mind can be understood in the concrete only as a system of beliefs, desires and purposes which are formed in the interaction of biological aptitudes with a social environment." (From the Preface.)

In this spirit Professor Dewey treats his subject under four headings: Under the Place of Habit in Conduct, he shows the relation of habit to character and custom. Under the Place of Impulse in Conduct he recognizes that impulses are important, but insists that they must not be treated as abstractions, since "the *meaning* of native activities is not native; it is acquired," i. e., secured in the social environment. Here too he explains that a rigid classification of instincts is impossible, and any over-emphasis of one, like

"self-love" or sex, is fallacious. The Place of Intelligence in Social Life, as the third division of the book, includes an explanation of the way intelligence grows out of conflict of habits, and a description of the active, essentially participating character of thought. Along with these topics the author directs attention to the need of public education which will enlarge life instead of perverting it. He also examines several more distinctly philosophical subjects. The group mind he believes to be an unnecessary notion; the traditional dichotomy between means and ends he regards as unfortunate; he exposes the error in utilitarian ethical theory, and shows the fallacy of urging any single good as the goal of ethics; and he discusses the nature of aims and of principles, the relation between desire and intelligence, and the relation of the present to "the future" in behavior.

In the fourth part of the book, the Conclusion, Professor Dewey considers conduct as a whole. After showing the really human and social nature of morals, he develops the idea of freedom as intelligent use of "the foresight of the future to refine and expand present activity." He discusses the good of activity, and the nature of evolution and progress. Progress is denied dependence on a remote dream-goal: "Progress is present reconstruction adding fullness and distinctness of meaning, and retrogression is a present slipping away of significance, determinations, grasp. . . . Unless progress is a present reconstructing, it is nothing; if it cannot be told by qualities belonging to the movement of transition it can never be judged. . . . The future is a projection of the subject-matter of the present, a projection which is not arbitrary in the extent in which it divines the movement of the moving present." And in realizing such progress, religion as a sense of the whole at once inspirits and liberates us.

Clearly this volume could as well be called "An Introduction to Social Philosophy" as "An Introduction to Social Psychology." The psychological portions are elementary, and contribute no new truths, unless "new" should be applied to the sound common sense displayed in perspective, illustrated for example by the truly reasonable use of such terms as sublimation and suppression. Most of the philosophy presented, too, will be familiar to students of Dewey. And organization of material, conciseness, and lack of repetition, are not always outstanding features. Yet the psychology and the philosophy are presented in simple language; and effective efforts against psychological mono-ideism and vicious philosophical entification, and in favor of educating instead of warping men's natures, are always timely. And now that philosophy has come to be subjected to criticism by psychopathology, Professor Dewey's view is of interest for being not evasion, not a shelter from "reality." On the contrary, as an effort to develop a working theory to effect adjustment to a complex social world, this philosophy is an outlook essentially adaptive and positive, that is to say, healthy.

W. S. Taylor.

JUVENILE DELINQUENCY. By Henry Herbert Goddard. 120 pages. Dodd, Mead & Company, New York, 1921.

This book reiterates much that has been said during the last few years concerning the importance of individual study before attempting to treat juvenile delinquents. A great deal of it is concerned with a description of the work of the Ohio Bureau of Juvenile Research. Considerable detail is to be found in describing this Bureau; and cases are cited showing the result of psychiatric rather than penal treatment. It is a book that should be widely read, as it thoroughly justifies such work as Dr. Goddard is doing, and will undoubtedly help introduce the gospel of scientific exactness in place of the old rule of thumb. A. WARREN STEARNS, M. D.

A GENERAL INTRODUCTION TO PSYCHOANALYSIS. By Sigmund Freud, LL.D. Authorized translation. With a Preface by G. Stanley Hall, President, Clark University. Boni and Liveright, New York. 8th Edition, 1921.

THE NEW PSYCHOLOGY AND ITS RELATION TO LIFE. By A. G. Tansley. London, George Allen and Unwin Ltd. New York, Dodd, Mead and Company. 1920.

These two books stand out in intellectual relief from the vapid background of current popular psychoanalytic publications. Written by authors whose calibre commands respect, they may challenge disagreement or invite hearing by virtue of a carefully thought out, if narrow, position, rather than by the arts of the literary demagogue, such as we have become accustomed to look for in literature of this type. No movement in psychology was ever so much caricatured as the Freudian movement. In days to come, when the young doctrine has grown to maturity, Professor Freud will perhaps come across some of these early pictures taken of him by admiring friends, and wonder whether he ever really looked like that. Certain it is, that in much of the Freudian literature it is difficult to recognize Freud.

It seems to the reviewer unfortunate that one who will undoubtedly be recognized by future generations as a genius should have chosen not to avail himself of the results of those who are engaged in parallel lines of work. Historically, no doubt, Freud is justified in claiming, as he does here and in the "History of the Psychoanalytic Movement," that it was his insistence on the factors of sex and the unconscious that, in the first place, brought down opposition upon him. Thus:

"By thus bringing into prominence the unconscious in psychic life we have raised the most evil spirits of criticism against psychoanalysis." (General Introduction, p. 246). "The aversion to this conclusion (as to the rôle of sexuality) is the most significant source of the opposition." In the experience of the writer, however, the opposition is now taking a different turn. "There

is no philosophical science of therapy which could be made practicable for your medical purpose. Neither speculative philosophy nor descriptive psychology, nor that so-called experimental psychology which allies itself with the physiology of the sense organs as it is taught in the schools, is in a position to teach you anything useful concerning the relation between the physical and the psychical." (P. 6.) "What psychology has to say about emotions — the James Lange theory, for instance — is absolutely incomprehensible to us psychoanalysts and cannot be discussed." (P. 343.) Bitter may have been the earliest experiences of Psychoanalysis, but this deliberate rejection of the findings of generations of workers, some of whom have at least an equal right with Freud to the title of greatness, seems to savour of the fanatic rather than the seeker after truth. It is the refusal to profit by the accumulated results of tradition, upon which, after all, Professor Freud, with every other scientific worker, stands that converts the "Introduction" from a landmark in psychological literature into a piece of brilliant doctrinaire pleading.

In this way science is hindered not only by personal animosities, which seem to arise inevitably in such cases, but by a narrowness and a dogmatism which are bound to follow when the results of workers in the same field "cannot be discussed." An example is to be found in the discussion of errors. Most people now admit that the Freudian scheme is a brilliant addition to our knowledge of the causes of forgetting and of mistakes. Few of those who are thoroughly acquainted with the traditional psychology will admit the necessity for all of the Freudian superstructures in specific cases. "In the group based on forgetfulness (forgetting names or projects, mislaying objects, etc.) I cannot believe in any such (physiological) basis. (P. 41.) The doctrine of Reproductive Inhibition seems too reasonable and sane for any such summary disposal, and its inclusion, as a hypothesis which has established itself to the satisfaction of workers in the same field, would surely have strengthened Freud's position. At least a criticism of the orthodox position is called for. Some cases of forgetting are caused in the Freudian manner. It does not follow that Forgetting is so caused. A similar point might be made with reference to the doctrine of the wish in the dream. Many dreams express a wish. That is a point upon which Freud has insisted, and where his insistence has done us great service. But there are many apparent exceptions which can be explained in an entirely adequate manner by the traditional physiological psychology. In the place of an explanation which results naturally from the thought of two generations of competent observers, we are asked to believe that the exception proves the rule in a manner so terrifyingly complex that one is tempted to wish, in the interest of the rule itself, that the exception had not proved it at all.

Bulwarks of the Freudian scheme are the mechanisms and the parent complex. It is the opinion of the reviewer that the mechanisms, such as

transference and sublimation, are not in themselves ultimate mental entities, but rather logical and clinical classifications. Whatever their value as such, they can only obscure the psychological issue unless their clinical and classificatory purpose is made clear. The writer believes that a more fundamental conception, which can be used to explain the Freudian mechanisms themselves, is to be found in physiological psychology under the name of the conditioned reflex. This view is put forward, for isolated cases, by Frink, Jelliffe and Kempf. Kostyleff states "dans la majorité des cas, l'hystérie se réduit a l'établissement de réflexes anormaux." Particularly useful in this conception for the explanation of the phobias and the resistances, which latter turn out, many of them, to be conditioned inhibitions of a type similar to those established by Pavlov. Very interesting, also, is Kempf's explanation of the early parental attachment on Conditioned reflex lines, which makes it possible to escape the unpleasant incest theory. The 'Oedipus Complex' theory seems typical of the whole work. True of many cases, it does not seem to hold for all. The names given above suggest that there has now been developed by other workers a more fundamental conception.

Mr. Tansley's book aims to present a "biological" view of the mind. The book is a solid, able piece of work, suffering, perhaps, by comparison with the brilliance of Freud, but gaining by its relative moderation. It exemplifies the pitfalls of writing off one's own subject. Thus one reads "his reasoning faculty is highly developed" (p. 10). "Fundamentally the human mind . . . remains a complex mechanism for initiating and carrying out specific conations." These statements will perhaps be revised in the new edition now forthcoming, but as they stand they have psychological implications which, to say the least, are old-fashioned in a book with this title.

Mr. Tansley has the master's ipse dixit for the statement that "much of the so-called experimental psychology is not investigation of the mind. It is largely concerned with the physiology of the special senses." This statement would seem, however, to argue a lack of acquaintance with elementary psychological tradition. Is not my visual perception of a table part of the content of my mind? The investigation of the way in which, through the organ of vision, certain types of consciousness are produced by certain stimuli surely belongs to psychology. It is only when we deal with processes apart from consciousness that we have pure physiology, in Tansley's sense. One must suspect a limited acquaintance with the "so-called experimental psychology" and its point of view.

It comes, further, with a shock of surprise to find that Mr. Tansley, as a biologist, should have accepted uncritically the Herd Instinct of Trotter. Nowhere is the question raised as to whether this so-called instinct is really an unlearned reaction. The trend of thought today is of course against such an instinct, comparable to the "self regarding instincts and . . . sex"

(p. 192). Every evidence, on the other hand, goes to show that the "herd instinct" is a learned reaction. Here again, the conception of the conditioned reflex is useful. "Suggestions arising from the herd," appear in many cases, to arise from a definitely learned reaction of the conditioned reflex type, as when the sight of a feeding pigeon becomes a conditioned stimulus for another pigeon to peck the ground, even though there is no food there. In this connection, the jungle book stories are, indeed, delightful reading, but Kipling hardly seems quotable in a psychological work as "one of our greatest modern exponents of the glories of herd life and the herd instinct."

In general, the book is the able, scholarly, expurgated work of a competent biologist writing on a psychological topic. The biological slant of the thought gives it a welcome coherence in these days of popular shoddy, and the moderate view taken upon some of the more extreme Freudian positions, as in the account of the dream, gives it a distinct place in the literature. The reviewer finds himself unable to agree with many of the Freudian positions, as laid down in the book, but finds it possible to believe that, with certain exceptions, it represents a first approximation to the form in which the Freudian tradition will ultimately take shape. Which is high praise for a book of this type. In interest of style it cannot compare with the other book under review, and indeed, the two present a curious contrast. Freud is brilliant, and writes about Freud. Tansley has attempted something more difficult. He writes about Freud and others. Careful and relatively moderate though his book is, one wishes that it had been written by Freud. GEORGE HUMPHREY.

ELEMENTS OF FOLK PSYCHOLOGY. Outlines of a Psychological History of the Development of Mankind. By Wilhelm Wundt. Authorized Translation by Edward Leroy Schaub, Ph. D., Professor of Philosophy in Northwestern University. London, George Allen & Unwin, Ltd.; New York, The Macmillan Company, 1921. Pp. xxiii, 532.

This treatise, typically Teutonic in its "verbigeration," was published first in 1912, and in English in 1916. Coming from the pen of the virtual father of modern, i. e., experimental, psychology, it were worthy of review even had it only small intrinsic value — but it has far more than that. It is a "synthetic synchronous survey" of the common conditions and the reciprocal relations of the phenomena of the folk-mind.

Besides two prefaces, an introduction, and an index, there are forty-six chapters of text. Wundt sees fit to divide the developmental period of humanity into four main periods: Primitive man, the totemic age, the age of heroes and gods, and the development to humanity. In a way, the book is propadeutic to a philosophy of history, which henceforth should consider "historical life from the point of view of the purposes that come to realization within it, and of the values that are created on the various levels of historical culture."

The work is far too extensive and touches on and discusses greatly too many topics for adequate review in this Journal. We may best be content with calling attention to the richness of its speculation and statement, somewhat different as they are from the animadversions of most anthropologists, who obviously are not psychologists as was Wilhelm Wundt, and analytic ad nauseam.

The first period's discussion, "Primitive Man," on the whole contains more psychology than do other parts of the book, particularly the chapters on "the beginnings of language," "the thinking of primitive man," and on his "intellectual and moral characteristics." The last-named chapter the author thus summarizes: — "The intelligence of primitive man is indeed restricted to a narrow sphere of activity. Within this sphere, however, *his intelligence is not noticeably inferior to that of civilized man.* His morality is dependent upon the environment in which he lives. Where he lives his life of freedom, one might almost call his state ideal, there being few motives to immoral conduct in our sense of the word. On the other hand, whenever primitive man is hunted down and hard pressed, he possesses no moral principles whatever. These traits are worth noting [however fragmentary] if only because they show the tremendous influence which external life exerts, even under the simplest conditions, upon the development of the moral nature."

One misses in the book the sort of opinion as to the mentality of primitive man such as Alfred G. Mayer and Franz Boas, for examples, have ventured to express. The work makes very interesting reading if one be patient with its racial mode of expression, and that although much of its material is anything but "original" with its famous systematizer.

GEORGE VAN NESS DEARBORN.

THE INTERFERENCE OF WILL-IMPULSES, with Applications to Pedagogy, Ethics and Practical Efficiency. By Abraham A. Roback. Psychological Monographs, Vol. XXV, No. 5, Whole No. 111, 1918. Pp. vii + 158.

In this important but relatively undeveloped field, Doctor Roback has concerned himself not with choices between alternates, but with our efforts to carry out both of two sets of impulses in a limited time. For such situations, the author has sought to answer the questions, How do rapidly alternating conscious impulses affect one another? And what conscious and unconscious phenomena result from the competition?

Mixed series of green dots and red crosses were exposed at systematically varied rates, and the subjects were instructed to respond to the crosses by a double up-down movement on a telegraph key, and to the dots by a double lateral movement on another key. Muscular responses and instantaneous introspections were recorded in detail. Having secured a great body of data in this way, the author concludes that "when a series of dissimilar acts is

performed in quick succession, they are bound to exercise an inhibitory effect upon one another," and an increase of the difficulty of either of the two movements is found to make both movements more difficult. But the two sets of impulses affect one another unequally; in this simple quantitative work, it is the more pleasant (i. e., in this case, the easier) movement which is favored always. When the interference becomes acute, a law of retroactive inhibition emerges: It is the highest co-ordination which disappears first; then with further and accumulating confusion, the co-ordination degenerates through several stages until it reaches practically complete blankness of mind. (The introspective analyses here fit in with Münsterberg's action theory.) For every individual reagent, apparently, there is an optimal rate above which and below which he is apt to make mistakes of commission (filling in the gaps instead of waiting) and omission. And the individuals fall into rather distinct groups, with an intermediate class, the extremes of which are called dynamogenic and inhibitive, respectively; types often recognized in crises of daily life. Doctor Roback's detailed description of the behavior of these types must be of great interest to students of the differences between individuals.

Among other observations, are the tendency to equalize or compensate for errors; the continuation of processes through inertia; the grouping of mistakes, like the locomotive engineer who runs past several warning signals in succession; the individual rhythms of work reported, with the suggestion that such rhythms may themselves result from interference; and the exaggerated estimates of their own errors, the fatigue, and the imagery reported by the subjects.

Doctor Roback's study may suffer in the estimation of some because of the seemingly dualistic language employed. But the work represents a great amount of careful observation and use of data. It seems to the reviewer, however, that he does not prove the described phenomena to be the specific result of *interference*. But whatever be the explanation of the *decrease* of good work under the given conditions, the decrease and the conditions are facts of real behavior importance. And the tentative suggestions offered at the end of the study are interesting. The suggestions for education include points regarding the order in which tasks of differing ease should be taken up, and call attention to the stage to which training must be carried. For ethics (and for deterministic psychologists), there is argument for "the universal tendency to move along the line of least resistance," so that "the aim in ethical education is to see that the desirable idea shall be the effective one." And especially for personnel problems, both in education and in practical life, there arise questions regarding possible tests for an individual's susceptibility to interference, and questions regarding the possibility and the advisability of changing such *susceptibleness* through corrective measures. These questions urge further study, as the author says; but the present monograph is a valuable contribution.

We note with interest that it is to be followed by a second part dealing with the complex processes of writing lapses. W. S. TAYLOR.

THE DEFECTIVE DELINQUENT AND INSANE. By Henry A. Cotton, Princeton University Press, Princeton, N. J., 1921. Price, $3.00.

This book comes as the culmination of several years of work by Dr. Cotton, during which time he has maintained his position with enthusiasm, despite the expression of a good deal of doubt, as to his conclusions, by other workers. Dr. Myer's foreword is a frank and fair discussion of the book. He says: "To the lay reader I should give a warning not to sit in judgment over the physician who is conservative, and not to run at once to the man who promises marvels."

The problem of curing or relieving insanity is so baffling and discouraging that one instinctively reads claims of cure in a spirit of skepticism. Yet the general psychiatry in this book is conservative and sound. The author discusses the problem of the insane in a most comprehensive manner. He sees the fallacies of unwarranted claims by observers in other fields. This rather lends weight to his own conclusions.

As to the chapters which deal with focal infection, its relation to mental disease, and the cure of insanity through its treatment, one must know to believe. Dr. Cotton presents cases, a great many of which, as published in this book, cannot be refuted or torn apart. The inference, from the experience of others, is that the benefits from treating these conditions are overstated; and yet, in the last analysis, one must form an opinion as to this work almost entirely upon his opinion of Dr. Cotton as an observer. When we review the tremendous opportunity and need for aggressive research with the insane, and contemplate the general apathy in this field on the part of those having to do with the management of institutions, it seems to the reviewer that all should commend a piece of work like Dr. Cotton's.

A. WARREN STEARNS, M. D.

t dealing
AYLOR.

Cotton,

by Dr.
usiasm,
y other
e book.
dgment
an who

uraging
. Yet
author
r. He
This

nental
ow to
ned in
xperi-
over-
work
en we
h the
those
lewer

D.